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Railway Age

SECOND HALF OF 1918—No. 10

SIXTY-THIRD YEAR

NEW YORK: WOOLWORTH BLDG.
CHICAGO: Transportation Bldg.

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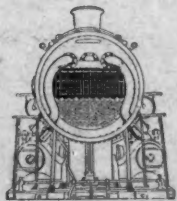
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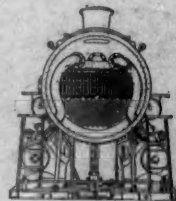
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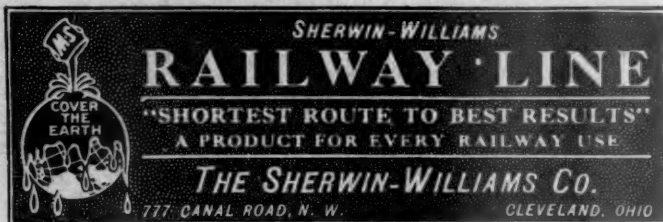
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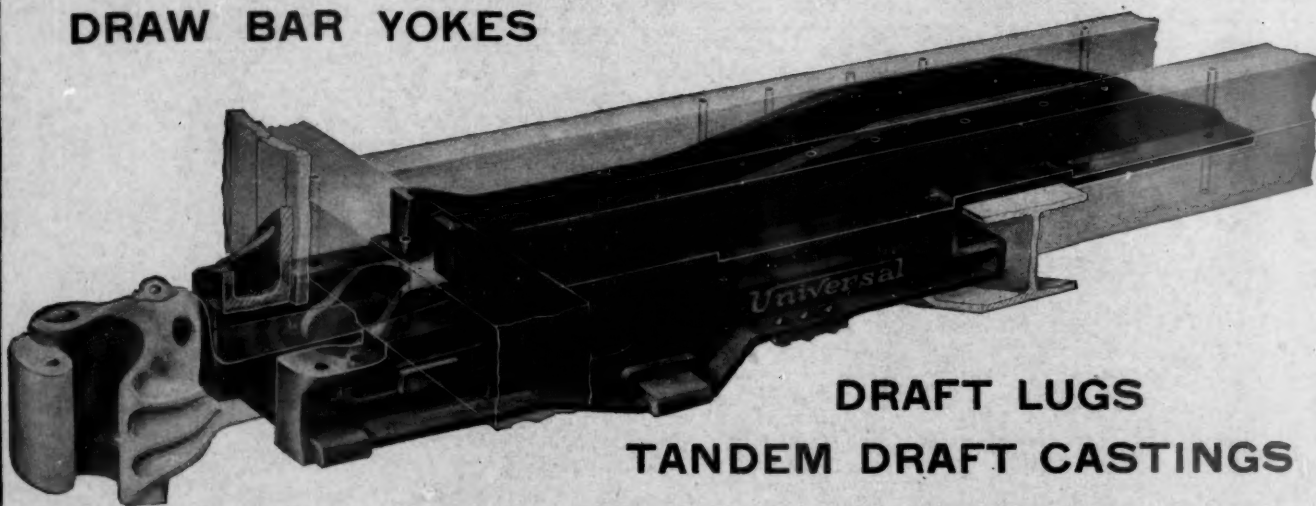
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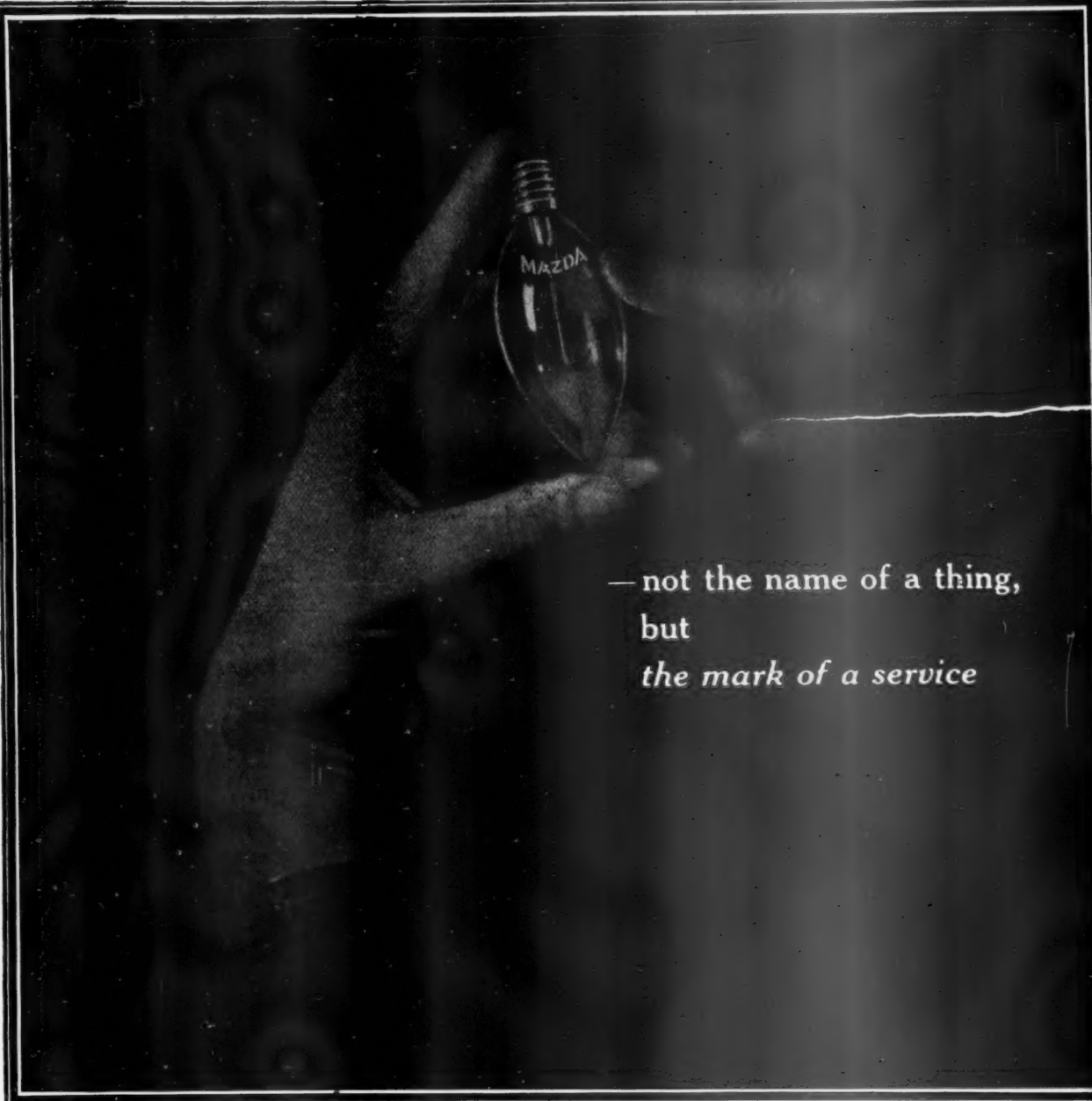
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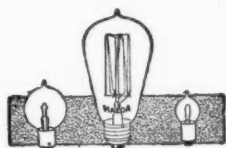
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RESEARCH LABORATORIES OF GENERAL ELECTRIC COMPANY

Railway Age

Vol. 65 September 6, 1918 No. 10



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WE GUARANTEE, that of this issue 7,650 copies were printed; that of these 7,650 copies 6,883 were mailed to regular paid subscribers, 170 were provided for counter and news companies' sales, 300 were mailed to advertisers, 142 were mailed to employees and correspondents, and 155 were provided for new subscriptions, samples, copies lost in the mail and office use; that the total copies printed this year to date were 323,567, an average of 8,988 copies a week.

EDITORIAL

Railway Age

Every man in this country between the ages of 18 and 20, inclusive, and 32 and 45, inclusive, must register on Thurs-

**Registration
Day
September 12**

day, September 12, in accordance with the provisions of the new Man Power bill. The registration and classification of 13,000,000 men is a tremendous task. The increased rate at which we have been sending men abroad has nearly depleted the reservoir of Class I men now available for full military service. Stern necessity requires the immediate enrollment of the additional men, leaving very little time for a far-reaching publicity campaign to advise and awaken every man interested as to his duty. It therefore devolves upon every loyal citizen not only to co-operate cheerfully in doing his duty, but to go far beyond this, and whether he is of draft age or not, to see that his associates and those in his employ are fully informed as to the requirements of the law. Every influence should be brought to bear to have a maximum registration. "It is the call to duty," said President Wilson in his proclamation, "to which every true man in the country will respond with pride and with the consciousness that in doing so he plays his part in vindication of a great cause at whose summons every true heart offers its supreme service."

The Fourth Liberty Loan Campaign will begin on September 28 and will undoubtedly be for a larger sum than any of the preceding loans. Real sacrifices

**Prepare for
Fourth
Liberty Loan**

will have to be made to insure its success and thus back up the remarkable progress that is now being made on the Western front. The war will be shortened and lives of our boys will be saved by getting the entire nation squarely behind the war program and supporting it enthusiastically, intelligently and thoroughly. While the money will be needed badly it is even more necessary that there be increased activity on the part of all of those who are engaged in occupations that are essential to the winning of the war—and this should mean practically everybody. To cultivate a "Win-the-War" spirit and "arouse serious enthusiasm for the loan," it is suggested that every employer or organization hold preliminary meetings for employees or members before the beginning of the campaign. The Liberty Loan Bureau has prepared suggestions for the programs for these proposed meetings; more complete information as to these programs with directions for securing copies of the Liberty Loan Committee booklet will be found on pages 36 and 37 of the advertising section of this issue.

The most significant action of the National Industrial Traffic League, at its convention in Buffalo last week, was

**Suggest a
Traffic Adviser
for Mr. McAdoo**

the resolution adopted in the last five minutes of the meeting, telling Mr. McAdoo that he ought to have an industrial traffic man on his board of advisers. This meeting lacked nothing in intense feeling, though it was very decorous. Nothing like

harshness or unfriendliness toward the railroads was even suggested by anything that was said or done; yet, the loudest applause of the day was that which followed Mr. Walter's pledge that no local committee would be allowed to settle any change in freight rates unless there were a shipper on the committee. At the same time there was very specific mention of innumerable faults in the operation of the freight (and passenger) service since the government took the job, and the officers and committees of the association went home with their portfolios full of things to be attended to. A visitor from Canada speaking at the close of the meeting, referring to the sentiment in the Dominion in favor of government operation of railroads, thought that this two-day exhibit of grievances could not be called very encouraging to such sentiment.

The statistics of the Railroad Administration for June and the six months ended June 30 make clear that in June,

**The Decline
in Freight
Movement**

and, also in the entire first six months that the railways were operated by the government, there were declines in the amount of freight traffic handled by them. In another column, under the heading "Efficiency Under Government and Private Management," we have commented upon the attempt of Theodore H. Price, actuary of the Railroad Administration, to demonstrate by the freight operating statistics for the first five months of the year that there had been a "striking increase in efficiency" under government control. Our conclusion is that the statistics for these five months do not show any increase of efficiency. The same conclusion must be drawn from the statistics for June, for in that month there were declines, as compared with June, 1917, in the total freight handled, in the average miles traveled per locomotive and per car per day, and in the average number of tons hauled one mile by each car and each locomotive. There was an increase in the average number of tons carried per loaded car, but the average number of tons per train was the same as it was in June, 1917. While there was a decrease in loaded freight car miles, there was an increase in empty freight car miles, and therefore an increase in the percentage of empty car miles to total car miles. There were increases in the proportion of freight locomotives and of cars in or awaiting shop. The statistics for June are given in detail elsewhere in this issue. One question which they raise is as to whether the decline shown in the total traffic handled was due to the fact that there actually was less traffic offered to the railways, or to the fact that they were unable to handle as much traffic as they did the year before. If the statistics of car shortages and surpluses were still being compiled and published they would throw light on this question, but the Railroad Administration discontinued them early in the year. If there has been an actual decline in the total amount of traffic available, this would largely explain the apparent decline in efficiency and might show that it was nominal rather than real. If, on the other hand, it be assumed that the amount of traffic offered to the roads was as great in June, 1918, as in June, 1917, the inference the statistics suggest is that there has been some decline in the general efficiency of freight train operation.

An Opportunity for Engineers

SINCE THE UNITED STATES RAILROAD ADMINISTRATION decided to substitute government operation for federal control of the railways it has become necessary to build up corporate organizations to represent the stockholders of the individual properties and to protect their interests in negotiations with the Railroad Administration. In consequence many experienced railway men have withdrawn from active participation in the operation of the properties in order that they may serve in corporate positions. As a result the railways have lost the services of such men as E. P. Ripley, Daniel Willard, Samuel Rea and Julius Kruttschnitt, who have long been regarded as among the leaders in the development of our transportation systems. In the building up of these duplicate organizations for the corporations no branch has been affected more directly than the engineering department. The considerations which will form the basis for a large part of the negotiations between the government and the carriers will center in large measure about the changes made in the physical properties and the standards to which the roads are maintained. The government has agreed to return the roads to their owners at the termination of the period of federal control in the same condition as when taken over or to make proper compensation for any deficiencies. Every change in the physical plant must, therefore, be made a matter of record. Under the conditions now existing it is not to be expected that the government will be able to maintain many of the roads to the high standards formerly prevailing and the consequent depreciation will become a very important factor in the final negotiations.

These problems are essentially engineering in nature and recognition of this fact has already resulted in the selection of engineers for executive positions with the corporations on several roads; thus on the Burlington a former chief engineer of another Hill line has been made chairman of the board of directors, on the North Western the chief engineer has been elected president of the corporation and on the Illinois Central the chief engineer has been made vice-president. On the other roads which have started to perfect corporate organizations, chief engineers have been among the first officers to be appointed, these men being selected in nearly all cases from among the higher engineering officers of the operating organizations. The war has created many vacancies in the engineering departments of the roads, particularly among the men in the lower ranks. The formation of these duplicate organizations is making equally serious inroads among the engineers in executive positions.

Politics and the Railways Under Government Control

DIRECTOR GENERAL of Railroads McAdoo on August 31 issued a statement regarding the participation of railway officers and employees in politics which has been read with much interest, and some feeling, by those to whom it was addressed. The director general said that "it was a matter of common report that railroads under private control were frequently used for partisan political purposes; that railroad corporations were frequently adjuncts of political machines, and that even sovereign states had been at times dominated by them." He added, "Now that the government controls and operates the railroads there is no selfish or private interest to serve, and the incentive to political activity no longer exists." He therefore ordered that no railroad officer or employee shall become a candidate for office, or otherwise take an active part in politics. Many of the men active in the management of the railways under private control are now serving the Railroad Administration in very im-

portant positions. They could tell Mr. McAdoo that the domination of politics by the railways long ago ceased, and that the main trouble within recent years has been the domination of the railways by politics. Furthermore, they could tell him that within recent years lobbyists representing the organized employees of the railways have been very active and influential in politics in various states and also at Washington, and they might be disposed to ask him why he referred so pointedly to the ancient domination of politics by the railways and did not refer at all to the more recent political activities of the railroad brotherhoods—those, for instance, in connection with the "basic eight-hour day"?

Mr. McAdoo is receiving faithful and efficient support from many former managers of railway companies, and it is difficult to understand how it can be necessary, as a means to helping win the war, for him to refer to the former relations between the railways and politics in a way which seems directly to slap men of this class in the face. The number of statements issued by persons connected with the Railroad Administration in which very direct reflections are cast upon the former private management of the railways is increasing. Government operation itself has not thus far proved either impeccable or invulnerable, and the Railroad Administration may not, in the long run, find it to its advantage to cast slurs upon private management which directly challenge comparisons between the past and the present.

Efficiency Under Government and Private Management

WHETHER THIS SHOULD be done or not, everybody knows that in the discussion of government ownership comparisons will be made between the efficiency with which the railways were operated under private management and the efficiency with which they are operated under government control. It is, therefore, of present and future national importance that any such comparisons which may be made shall be correct and fair. Certainly, any comparisons emanating from official sources which are incorrect or unfair should not be allowed to pass unchallenged.

Theodore H. Price, actuary of the Railroad Administration, recently has sent to the press a statement comparing the results of the operation of the freight service of the railways during the first five months of government control with the results of the operation of that service under private management during the first five months of 1917 which in essential respects is neither fair nor correct. His statement was presented in the *Railway Age* for August 30, pages 382-3. A New York newspaper recently published an editorial contending that the statistics of freight operation for the five months ending with May did not show that there had been any increase in efficiency under government management. Mr. Price, on the basis of these same statistics, tries to demonstrate that there has been a "striking increase" of efficiency. After having more than once, by implication, reflected on the efficiency with which the railways were operated under private management, he concludes, "I can only add that two months' close study of what has been done and may be done under a unified management toward increasing the serviceable efficiency of the American railways convinces me that the wisdom of the President's action in taking over the transportation facilities of the country will be cumulatively demonstrated as the years roll by."

The implication of these words appears to be that he expects, if not actually desires, to see the government permanently retain possession of the roads. If Mr. Price, instead of giving "two months' close study" to railway matters, had given two years' close study to it, or, better still, ten years', he would hardly have drawn from the statistics

he uses the conclusions he does. His effort to make the press and public believe they show what, in fact, they do not show, renders it necessary, in the interest of intelligent public consideration of the railway question, to make clear just what they do show.

The statistics of freight operation in question were compiled by the Railroad Administration itself. They are for the five months, January to May, 1917, inclusive, and for the same months of 1918. They show that the number of tons of freight moved one mile was six-tenths of one per cent less in these months of 1918 under government control than in the same months of 1917 under private management. Mr. Price contends that this does not necessarily demonstrate any decline in efficiency, for, as he points out, there was an increase in the average trainload, and the number of miles which freight cars traveled under load in 1918 was 8.6 per cent less than the number of miles they traveled in 1917 to handle an approximately equal traffic. He continues:

"A reduction in the average daily mileage of locomotives and freight cars will also be noticed. This is * * * due to the heavier trainload and carload. It is not economically practicable to haul heavy trains as fast as light ones and the Railroad Administration has adopted the policy of loading trains to capacity and moving them on schedules that are not too fast to be maintained. * * * The showing indicates, not inefficiency, but a striking increase in the efficiency with which the railroads are being operated, and that it is directly due to the heavier loading of the freight cars and the greater trainload now pulled by each engine. * * * Instead of proving the inefficiency of government management, the newspaper referred to seems to have adduced the strongest possible proof of its efficiency and wisdom in demonstrating that the old cars and engines are being made to do more work than they performed under private management."

Now, what are the facts? Let us first examine those relating to car efficiency. The statistics show that the number of tons moved per loaded car increased from 26.2 to 28.5, or 8.8 per cent. But they also show that the average miles traveled by each car daily declined from 26.4 to 23.7, or 10 per cent. Mr. Price says that "the old cars are being made to do more work than they performed under private management." But the work a car does depends not only on how many tons it carries when loaded, but on how many miles a day it moves, and the decline in the average number of miles traveled by each car daily was so much greater in proportion than the increase in the number of tons handled per loaded car that, as shown in the very statistics Mr. Price quotes, the number of revenue tons hauled one mile monthly by each car actually declined from 13,586 to 12,960, or 4.6 per cent. It is not true that the "old cars were made to do more work." Mr. Price's own figures show that on the average each car did less work.

Next, as to locomotive efficiency. The statistics show, as Mr. Price says, that there was an advance in the trainload, the average number of tons handled per train in the five months of 1917 being 629 and in 1918 646, an increase of 17 tons, or 2.7 per cent. But they also show that the average miles traveled by each locomotive daily declined from 69.1 to 65.7, or 4.9 per cent. Mr. Price implies that this decline in daily locomotive mileage was due to the fact that the locomotives pulled heavier trains. Let us see about that. The increase in the average trainload having been 2.7 per cent, while the increase in the average tons per loaded car was 8.8 per cent, one is at once led to suspect that there was a decline in the average number of cars moved in each train. A few calculations demonstrate that this was the case. The average number of cars handled per train in the first five months of 1917 was 33.8 and in the first five months of 1918 only 32.6, a decline of 1.2 cars. Now, the average freight car weighs over 20 tons. Since the increase in the average amount of freight handled per train was only 17 tons, while the reduction in the weight of the cars pulled in the average train was at least 24 tons, it necessarily follows that the average gross weight of each train moved in the first five months of 1918 was at least seven tons less

than the average gross weight of each train moved in the first five months of 1917. Therefore, on Mr. Price's own theory, the average mileage traveled by each locomotive daily should have been increased, not diminished.

But, as these statistics show, instead of being increased, the average mileage traveled by each locomotive daily was diminished. What effect did this have on the average amount of work done by each locomotive? The increase in the average trainload was only 2.7 per cent, while the reduction in the average mileage made by each locomotive daily was 4.9 per cent. In consequence, as is shown by the very table on which Mr. Price bases his argument, in the first five months of 1917 the average number of revenue tons moved one mile by each locomotive monthly was 1,024,754, while in 1918 it was only 1,006,007, a decline of 1.8 per cent. In other words, contrary to his conclusion, not only did each car do less work than when the railways were under private management, but each locomotive also did less work.

Mr. Price says that the increase of 8.8 per cent in the average carload was equivalent to an addition of 211,200 freight cars, and that the increase of 2.7 per cent in the average trainload was equivalent to the addition of 1,750 locomotives. He adds: "Surely this is better than buying new cars and locomotives at a time when they can only be had at extravagant prices when the manufacturing energies of the country are overtaxed." He bases his calculation upon the assumption that there are 2,400,000 freight cars and 65,000 freight locomotives in service. But his own table (*Railway Age*, August 9, 1918, page 258) shows that there are only 30,655 freight locomotives in service. Furthermore, he apparently forgets that the average mileage made by each car and each locomotive as well as the average load it transports determines how much business it handles. The decline of 4.6 per cent in the number of tons of freight moved one mile by each car was, according to his own method of calculating, equivalent to a reduction of 110,400 in the number of cars in service; and the decline of 1.8 per cent in the number of tons moved one mile per locomotive was equivalent to a reduction of 552 in the number of freight locomotives in service. Therefore, on his theory, government operation increased, instead of reducing, the need of additional cars and locomotives.

So much for the "striking increase in the efficiency with which the railroads are being operated" of which Mr. Price proclaims himself the discoverer. Taken at their face value, as he takes them, the statistics he uses show, not an increase, but a decrease of efficiency. But they should not be taken at exactly their face value, and Mr. Price has rendered the Railroad Administration a very poor service in discussing them as if they should be. The statistics themselves are interesting and instructive; but, like other statistics, they yield no useful information unless analyzed and interpreted in the light of the conditions under which the operations they reflect were carried on. Among the reasons why these particular statistics cannot be taken at exactly their face value are the following:

First, the average miles made per car and per locomotive per day are determined only to a minor extent by the speed with which they are moved when in train, since, on the average, locomotives are in train only about 30 per cent and cars only about 10 per cent of the time. Therefore, the declines in the average mileage of cars and locomotives per day undoubtedly are due to causes having little or no relationship to train operation.

Second, the severe weather of last January caused serious reductions in the amount of traffic handled with each car and locomotive, and the effect of these reductions is still reflected in all operating statistics which include those for the month of January.

Third, the operating department of the Railroad Administration has been concentrating its efforts on moving, not more

traffic of all kinds, but more essential traffic, and therefore failure to increase the total traffic handled does not necessarily indicate want of efficiency.

Fourth, regardless of what statistics may indicate, railway equipment has not been in satisfactory condition, and this has interfered with getting as much service from it as theoretically ought to be possible.

One thing is certain, however, and this is that, taken as a whole, the statistics regarding the results of freight operation since January 1, 1918, do not show, and cannot be made to show, that there has been a "striking increase" or, in fact, any increase, in the efficiency with which the railroads have been operated since the government took them over, and anybody who attempts to show the superiority of government over private management by the use of available statistics will fail. As the *Railway Age* said in an editorial last week, "every day which passes makes it clearer that the railways under the Railroads' War Board were operating close to their maximum capacity with the facilities they had, and that the only way they can be made to handle much more traffic is to enlarge their facilities." The *Railway Age* never took any stock in the idea that by merely "unifying" the railways under government management a great increase could be secured in the amount of traffic moved; and that idea is being rapidly demolished by actual experience. The operating officers of the Railroad Administration and of the individual railroads are working as hard and effectively as they can, but experience is demonstrating, as this paper repeatedly has predicted it would demonstrate, that government management is no more capable of making bricks without straw than is private management.

Denver & Rio Grande

FOR THE FIRST TIME in the history of the Denver & Rio Grande the road earned over \$10,000 a mile gross. Total operating revenues in the calendar year, 1917, amounted to \$28,423,000, or an average of \$11,016 per mile on the 2,580 miles which the company operates. A more liberal policy was pursued in regard to maintenance than has been the custom for a good many years. There was spent on maintenance of way \$3,563,000, an increase over the previous year of \$1,083,000, and the average per mile of road operated was \$1,381. This is not at all a large expenditure, but it was \$417 per mile more than was spent in 1916. There was \$5,185,000 spent on maintenance of equipment, an average, exclusive of depreciation, of \$3,430 per locomotive, \$545 per passenger car and \$107 per freight car.

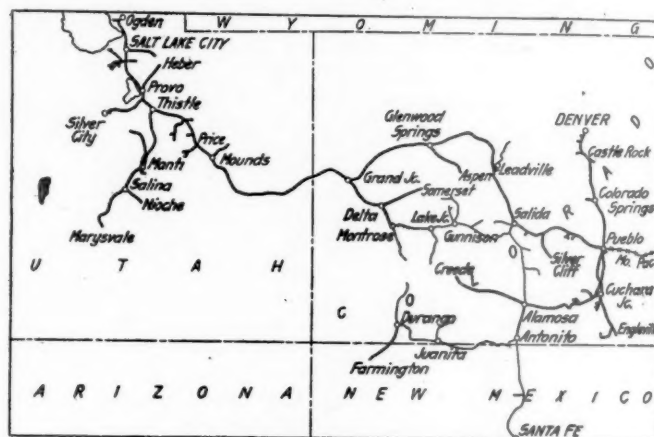
For some years the Denver & Rio Grande has been struggling to stave off a receivership. Even before the election of E. L. Brown as president in the latter half of 1917, apparently there was a decision arrived at to put the property in better shape at all costs. As a matter of fact, had not the government taken over the railroads, it would seem that the Denver & Rio Grande inevitably would have had to pass through a receivership. Under the company's guarantee of the Western Pacific first mortgage bonds, it was involved in legal difficulties. The Equitable Trust Company, as trustee for the Western Pacific first mortgage bonds, secured an attachment against \$1,292,000 of the \$3,208,000 cash which the Denver & Rio Grande had at the end of the year. It may have been the apparent certainty of receivership which persuaded the management to set to work to put the property in better shape without waiting for the formal appointment of a receiver. In any case, there are strong evidences of the definite adoption of a plan of rehabilitation.

Besides the increases in maintenance expenses mentioned above, there was \$964,000 spent for additions and better-

ments to road and \$1,847,000 for new equipment. Part of this new equipment consisted of Santa Fe type locomotives, the operation of which necessitated quite extensive improvements between Denver, Col., and Salida. Ballasting, bankwidening and the strengthening of bridges had to be done on a fairly large scale and three 100 ft. turntables were installed. The company expects to complete the installation of telephone train despatching on its entire main line from Denver to Ogden, Utah, in the near future and there is now only a section between Denver and Grand Junction which remains with the telegraph train despatching system.

Total operating expenses in 1917 amounted to \$19,728,000, an increase of \$4,852,000, or about 33 per cent. The increases in maintenance have already been mentioned. Transportation expenses amounted to \$9,252,000, an increase over the previous year of \$2,629,000, or 40 per cent. The two largest increases were, as was to be expected, in wages and in fuel.

Notwithstanding the putting into operation of 15 new locomotives, the average train load was somewhat lower in 1917 than in 1916. The average total train load, including company freight, was 540 tons in 1917, as against an average in 1916 of 553 tons. With the amount of work necessary to bring parts of the line up to a safe standard for the operation of the heavier locomotives, we may assume that the economies



The Denver & Rio Grande

which will accrue from this heavier power were not effective in 1917.

In connection with the slightly lower average train load, it is interesting to note that there was a falling off in tonnage of precious ores carried of 358,000 tons, or nearly 9 per cent. On the other hand, there was an increase in the tonnage of bituminous coal carried of more than 19 per cent. In 1916, of the total 12,820,000 tons carried by the Denver & Rio Grande, 33 per cent was furnished by bituminous coal and 34 per cent by precious ores. In 1917, of the total 13,697,000 tons carried, 27 per cent was furnished by precious ores and 35 per cent by bituminous coal.

The following table shows the principal figures for operation for 1917, as compared with 1916:

	1917	1916
Average mileage operated.....	2,580	2,573
Freight revenue.....	\$21,849,883	\$19,638,456
Passenger revenue.....	4,735,517	4,094,500
Total operating revenues.....	28,423,138	25,464,486
Maintenance of way and structures.....	3,563,297	2,480,173
Maintenance of equipment.....	5,185,374	4,262,733
Traffic expenses.....	484,131	494,129
Transportation expenses.....	9,252,440	6,622,974
General expenses.....	869,174	698,421
Total operating expenses.....	19,728,429	14,876,355
Taxes.....	1,231,011	1,124,461
Operating income.....	7,462,267	9,461,773
Gross income.....	8,546,743	10,643,641
Net income.....	2,099,763	4,361,870
Sinking fund.....	172,420	159,958
Renewal fund.....	130,950	144,311
Appropriated for additions and betterments.....	1,796,393	2,300,000
Surplus.....		1,757,600

Chicago, Milwaukee & St. Paul and the Northern Pacific

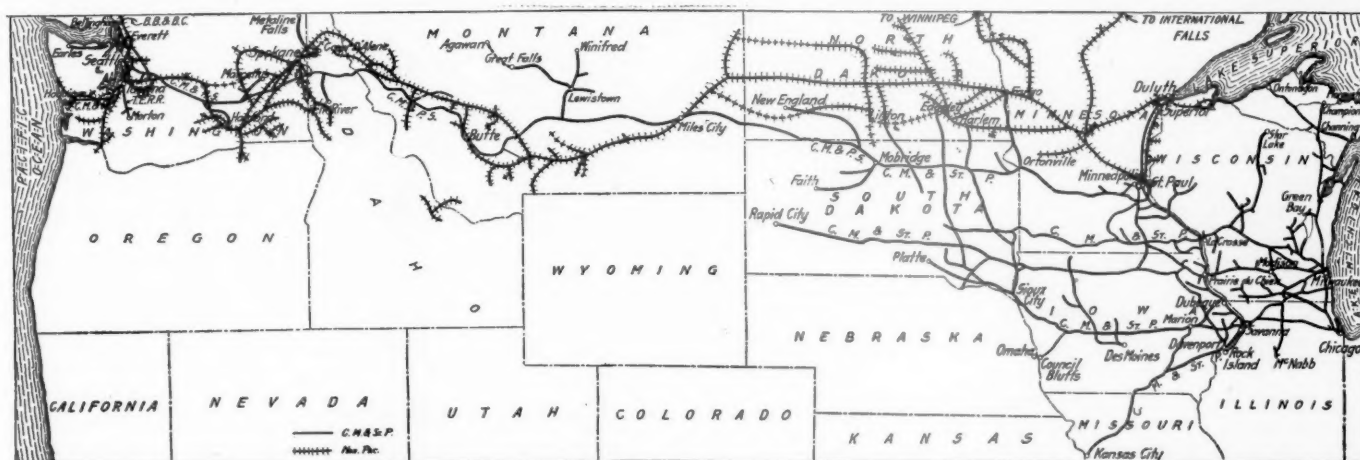
IT IS RATHER SURPRISING that the Chicago, Milwaukee & St. Paul carried less freight in 1917 than in 1916 and had it not been for a somewhat longer average haul and an increased rate received per ton per mile, combined with an average passenger journey considerably longer in 1917 than in 1916, the company would have actually had lower operating revenues last year than in the previous year. As it was, total operating revenues amounted to \$113,739,000, an increase over 1916 of only \$3,130,000. This is in contrast with the Northern Pacific operating in the same territory. Total operating revenues of the Northern Pacific amounted to \$88,226,000, an increase of \$7,944,000. This is an increase of 9.9 per cent comparing with an increase of 2.8 per cent for the St. Paul. Freight revenue for the Northern Pacific amounted to \$65,259,000 in 1917, an increase of 9.60 per cent. Passenger revenues amounted to \$15,647,000, an increase of 12.09 per cent. The freight revenue on the St. Paul amounted to \$79,957,000, an increase of 0.38 per cent and the passenger revenue amounted to \$21,330,000, an increase of 7.96 per cent.

The number of tons of freight carried on the Northern Pacific totaled 22,842,000 in 1917, an increase of 4.33 per cent, while on the St. Paul the total number of tons carried was 38,444,000, a decrease of 3.86 per cent. The average

7.09 per cent. On the St. Paul the number of passengers carried was 15,484,000, a decrease of 3 per cent, and the average passenger journey was 63 miles, an increase of 9.87 per cent. The average receipts per passenger per mile for the Northern Pacific was 2.368 cents, an increase of a fraction of one per cent, and for the St. Paul 2.174 cents, an increase of about one and a half per cent.

Both the Northern Pacific and the St. Paul were hard hit in increased costs of operation; in fact, harder hit proportionately than was either the Southern Pacific or the Atchison, Topeka & Santa Fe. Total operating expenses on the Northern Pacific amounted to \$53,298,000, an increase over 1916 of \$10,066,000. Total operating expenses on the St. Paul amounted to \$85,196,000, an increase of \$11,431,000. The Northern Pacific spent more for maintenance in 1917 compared with 1916 than did the St. Paul and was not apparently able to hold transportation expense down as effectively as the St. Paul did. Transportation expenses amounted to \$28,531,000 on the Northern Pacific, an increase of 26.63 per cent, while transportation expenses on the St. Paul amounted to \$48,083,000, an increase of only 16 per cent. It must be remembered that the Northern Pacific's business handled was quite a little larger in 1917 than in 1916 while the St. Paul's business was almost the same.

Maintenance of way and structures on the Northern Pacific cost \$10,782,000, an increase of 15.70 per cent. On the St. Paul, maintenance of way and structures cost \$10,953,000,



The Chicago, Milwaukee & St. Paul and the Northern Pacific

length of haul on the Northern Pacific was 386 miles, or 9.39 per cent longer than in 1916, and on the St. Paul 274 miles, or 2.05 per cent longer than in 1916. The average rate received on the Northern Pacific was 7.41 mills per ton mile, a decrease of 3.89 per cent, while on the St. Paul the average revenue per ton per mile was 7.582 mills, an increase of 2.31 per cent.

The following table shows the tonnage of each of the general classes of commodities carried by the Northern Pacific and the St. Paul in 1917 and 1916:

	1917		1916	
	St. Paul	Northern Pacific	St. Paul	Northern Pacific
Products of agriculture.....	7,009,902	4,128,537	7,996,020	4,070,962
Products of animals.....	2,169,679	533,610	2,236,503	474,491
Products of mines.....	11,715,375	7,606,976	11,406,398	6,782,025
Products of forests.....	6,430,357	6,751,004	6,404,785	6,672,025
Manufactures.....	6,965,658	2,415,451	7,401,425	1,955,509
Miscellaneous.....	4,153,382	1,406,573	4,541,005	1,322,301
Totals.....	38,444,353	22,842,151	39,986,136	21,893,980

The total number of passengers carried by the Northern Pacific was 8,418,000, or 4.32 per cent less than in 1916, and the average passenger journey was 75 miles, an increase of

a decrease of 12.5 per cent. The expenditure per mile on the St. Paul looks rather low. It is quite probable that the management found it exceedingly difficult, if not practically impossible, to get all of the track labor that it needed. There is another thing also to be taken into consideration. The St. Paul operates 440 miles of road which has recently been electrified. In the course of the work of electrification, the roadbed and structures on this 440 miles were put into such shape as to require comparatively little renewal expenditures for a number of years.

Both companies spent considerably more for maintenance of equipment. The Northern Pacific spent \$11,245,000 on this account in 1917, an increase over 1916 of 33.55 per cent. The St. Paul spent \$22,015,000, an increase of \$4,482,000, or 25.6 per cent. At the end of the year 84.35 per cent of the Northern Pacific's locomotives were in good order as compared with 82.67 per cent in good order at the beginning of the year. Of the remainder, 121 locomotives or 8.89 per cent of the total, were in fair order and 92, or 6.76 per cent, were at shops. The St. Paul does not give figures showing the condition of its equipment. It is rather interesting to note, however, that the St. Paul spent \$221,000 for repairs of

electric locomotives. The company had in service in 1917 45 of these locomotives so that the average expenditure per locomotive was about \$5,000.

The Northern Pacific spent \$5,211,000 on additions and betterments, the largest items being for terminal yards, bridges and shops, engine houses and turntables. There was also \$3,399,000 spent for branch lines, grade revision and second main track. This included \$773,000 spent for construction of the Lake Basin branch and \$791,000 for the Flathead Valley branch, both in Montana. The company spent \$4,260,000 for new equipment, charging \$1,986,000 of this amount to reserves and the remainder to capital account. The St. Paul spent \$7,269,000 for additions and betterments which included \$1,573,000 for power stations, transmission system, etc. In addition to the 440 miles previously mentioned as being already operated by electricity, there is 217 miles from Othello, Wash., to Seattle and Tacoma on the western end of the line which is now being equipped for electric operation.

It will be particularly interesting to see what effect the elimination of competition will have on the net earnings of two roads situated like the Chicago, Milwaukee & St. Paul and the Northern Pacific. Competition between these roads and between each of them and other roads in the northwest was keen to an extent that is hard to realize. It entered into the adoption of every policy great or small. It was taken into consideration in all questions of operation as well as in questions relating to rates. The Northern Pacific, being a Hill road, naturally gave a greater relative importance to train loading as compared with securing additional competitive traffic than did the St. Paul. The St. Paul, under the management of A. J. Earling, had certain traditions of service which rank high in the history of American railroading. On the other hand, possibly the newer theories of scientific railroad operation were not as thoroughly understood or at least applied in quite so thorough-going a manner on the St. Paul as on the Hill roads.

Before the government took over the railroads, H. E. Byram had been elected president of the St. Paul, succeeding A. J. Earling, who became chairman of the board of directors. Mr. Byram stayed with the property as federal manager and J. M. Hannaford, who had been president of the Northern Pacific, stayed with that property also as federal manager. In the six months, January to June, 1918, the Northern Pacific earned gross \$42,023,000, comparing with \$42,148,323 gross earned in the first six months of 1917. Operating income amounted to \$6,027,000 or \$8,310,000 less than in the first six months of 1917. The Chicago, Milwaukee & St. Paul earned gross in the first six months of 1918 \$55,072,130, comparing with \$52,282,357 for 1917, and it had an operating deficit of \$1,879,017, comparing with operating income of \$12,713,606 in 1917. The following table shows the principal figures of operation for the two roads in the calendar years 1917 and in 1916:

	1917		1916	
	St. Paul	N. P.	St. Paul	N. P.
Average mileage operated...	10,257	6,522	10,196	6,529
Freight revenue	\$79,957,271	\$65,258,995	\$79,648,513	\$59,543,090
Passenger revenue	21,329,946	15,646,778	19,756,835	13,959,370
Total operating revenues...	113,739,202	88,225,726	110,609,689	80,281,343
Maintenance of way and structures	10,953,309	10,782,178	12,516,338	9,319,432
Maintenance of equipment	22,015,201	11,245,120	17,533,448	8,419,939
Traffic expenses	1,803,964	1,233,124	1,961,979	1,219,422
Transportation expenses	48,083,125	28,531,413	40,307,996	22,531,072
General expenses	2,162,192	1,635,779	1,970,637	1,273,389
Total operating expenses...	85,195,964	53,297,861	73,765,051	43,232,278
Taxes	6,517,212	6,910,728	5,210,119	5,505,124
Operating income	22,026,026	28,007,999	31,327,241	31,532,181
Gross income	23,845,379	42,790,502*	34,442,982	40,204,288
Net income	4,468,632	29,502,686	16,209,842	26,948,011
Dividends		17,360,000		17,360,000
Surplus		12,142,686		9,588,011

*The Northern Pacific received a 10 per cent extra dividend in 1917 on its \$53,856,350 Chicago, Burlington & Quincy stock which it owns. Nearly all of this stock is deposited under the outstanding Northern Pacific, Great Northern joint bonds.

Note: The gross income and following figures for the St. Paul in 1916 are taken from Interstate Commerce Commission reports.

Letters to the Editor

Women as Railroad Clerks

CHICAGO.

TO THE EDITOR:

The *Railway Age* of August 16, contains an article entitled "Give a Man a Man's Work," which states that a great many young men in railroad offices are still engaged in clerical work which, in the opinion of the writer of the article, could be done as well, if not better, by girls. This again brings home forcibly the fact that the railroad clerk is not understood or appreciated in a general way. The impression exists in the minds of too many that a clerk just means some one to copy reports, work out details as outlined in forms, adding a column of figures or two, etc. The sooner this impression is changed, the better for all concerned.

It is true that certain positions can be filled by girls; give our officials credit for being broad enough to see it. In fact, for several years there has been a tendency to fill clerical positions with girls to a great extent and with success. However, I find from my own personal experience that a great many clerical positions can not and should not be filled by girls. These are positions which require from two to three years' education to handle them correctly and efficiently. Grant that girls could be trained to fill them, we would still be confronted with a big problem. Usually about the time they are educated to the useful stage, they get temperamental or try matrimony, with the result that more must be trained—the same procedure over again and again.

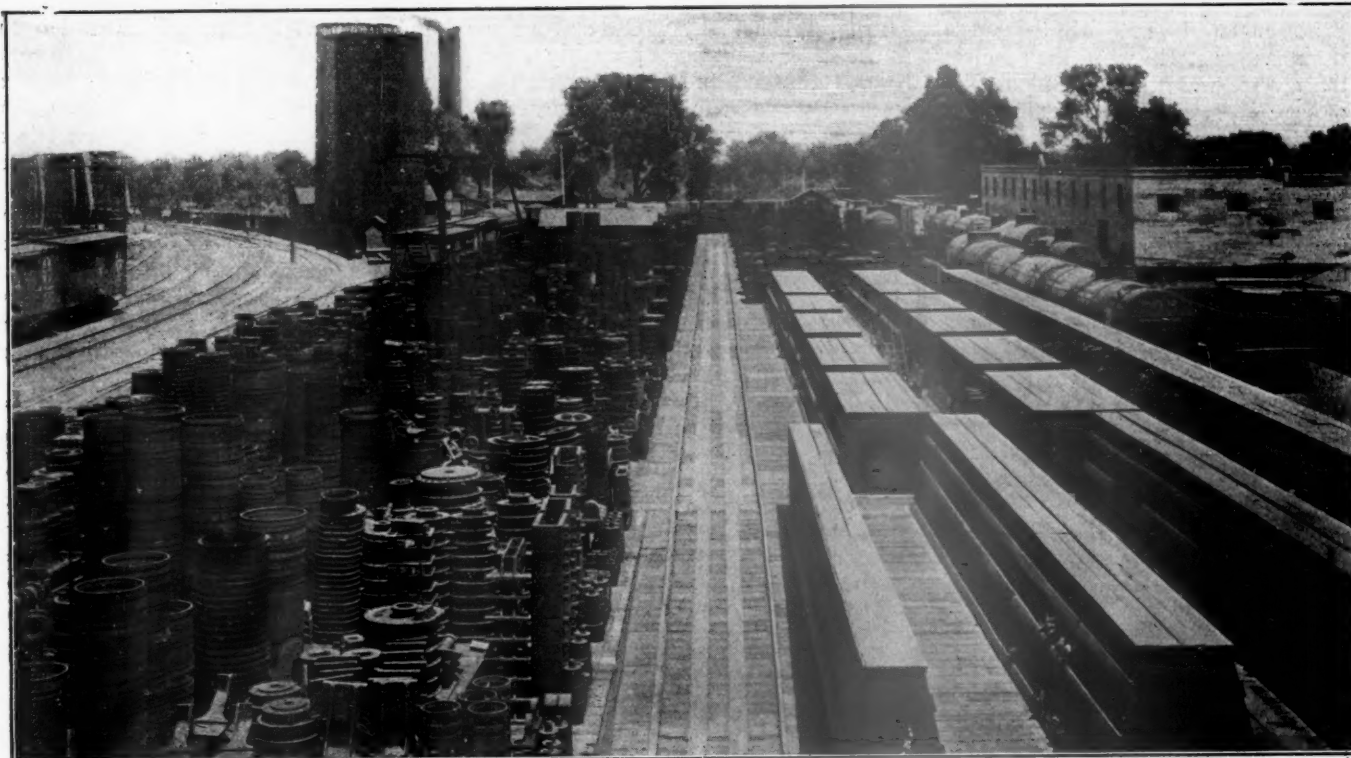
To educate girls as well as men, along clerical lines is a problem that is costing railroads a lot of money, and should be given some consideration. There are classes of railroad clerks, who are indispensable, and they are not old men either. The sooner we wake up and attach some importance to the railroad clerk the better it will be for the entire railroad organization. I know of several offices which would be seriously crippled if more girls were employed; in fact, their lack of proper clerical knowledge would tend to tie up important terminals. I gladly give due credit to the women of our country who are surely doing some wonderful work.

N. H. GREENBERG,

Chief Clerk to Assistant Agent, Chicago and Eastern Illinois.

GOVERNMENT CONTROL IN GREECE.—The Greek Government has decided that under present conditions it is necessary to bring all means of transport strictly under government control as has been done in other countries at war including the United States. As a result of this decision the government has taken over the Piraeus-Peloponnesus Railway.

INCREASED TRAFFIC ON DOMINICAN CENTRAL RAILROAD.—The traffic on the Dominican Central Railroad for the fiscal year ended June 30, 1918, greatly exceeded that of the year previous. During the past year 45,000 tons of freight were carried from Puerto Plata to the interior, and from the interior to Puerto Plata and between intermediate stations, against 24,800 tons in 1916-17, a gain of 50.9 per cent. Freight receipts increased 63.8 per cent, and passenger income 43.5 per cent. An arrangement has recently been concluded between the Dominican Central and the Samana & Santiago railroads whereby no charge is made shippers for transferring cargo from one road to another at the Moca Terminals.



A Typical Storage Platform for Castings

Efficiency In the Handling of Railway Supplies

Methods Employed by the Santa Fe in Storing, Handling,
Distributing and Accounting for Material

By Charles E. Parks

Assistant Editor, The Santa Fe Magazine, Chicago

RAILROAD STOREKEEPING is in a state of continuous evolution. The efficient handling of railway supplies is a comparatively late development of the transportation industry. The growth of rail transportation has been so rapid that certain elements have lagged behind in the general development, employing the methods and practices of the eighties in an endeavor to cope with present-day conditions and problems. This has been true of the supply department perhaps to a greater extent than any other.

During the early construction period the work of securing, handling and accounting for supplies was undertaken in a very haphazard manner, each department endeavoring to meet its own needs, but as the question of maintenance and operation became paramount, it was evident that a department especially organized for this purpose was a necessity. Even then the store department was looked upon as a necessary evil, and it is only within recent years that it has been regarded as a definite source of assistance to the operating branches and a means of effecting real economies.

The Atchison, Topeka & Santa Fe was among the first, if not the first railroad in the United States, to recognize the definite possibilities of the store department, and very early set about to develop it into a valuable tool in the economical maintenance and operation of its property. The establishment of an efficient system of handling supplies on the Santa Fe was impelled by necessity. It was a stupendous task even under ordinary conditions properly to handle, distribute and account for the material needed for the operation and maintenance of nearly 12,000 miles of line, stretching from Chi-

cago to the Pacific southwest and to the Gulf Coast, with its numerous connecting and branch lines. The task became complicated when in addition it was necessary to handle the supplies for from five to twenty million dollars' worth of addition and betterment and construction work undertaken annually, 50 per cent of which amount was invested in material. To handle this vast stock efficiently and distribute it without waste to dozens of widely separated jobs, many of them undertaken at the same time, required a system that would give the desired result with the least output of labor and expense and at the same time produce the necessary efficiency and accuracy.

To begin with the Santa Fe discarded all theory relating to the problem of material handling and the store department was given authority to take such progressive steps as might be necessary for its proper solution. It based its system on a common-sense diagnosis of existing conditions. If this analysis sustained an efficiency theory, the theory was retained. The opinion was once held by all operating officers that the functions of the store department were merely those of a supplyman—to furnish supplies on demand—and its authority over material ended when the material was delivered. The Santa Fe discarded this theory. A little investigation disclosed the enormous loss resulting from its practical application due to the lack of co-operation between the store department and the actual users of the supplies. When new work was undertaken it had been customary to order, purchase and deliver all the material needed before any construction work was done, with the result that much

of the material was badly damaged and some of it actually destroyed or stolen when the time came to use it. Sometimes the reverse was true and important work was impeded and often entirely postponed because of the lack of needed supplies. Faulty specifications and incorrect requisitions were another source of untold delay and expense and no attempts were made to prevent the scrapping of serviceable material.

In order to remedy this inefficiency, the store department undertook to secure the co-operation of the operating and mechanical officers, with the result that material was delivered only as needed, the expense and delay due to faulty specifications and incorrect requisitions were greatly reduced, serviceable material was reclaimed and the investment in material reduced to actual necessities. This co-operative spirit has been the real foundation stone upon which the success of the Santa Fe store department is based.

Organization

The chart illustrates the store department organization on the Santa Fe. At the head of the department is a general storekeeper who reports directly to the vice-president in charge of purchases and stores. In this way the purchasing and store departments are closely united under one head, although at the same time maintaining separate and independent organizations. The general storekeeper has jurisdiction over the custody, distribution and accounting of all the material used on the entire system, including the Santa Fe proper and numerous subsidiary companies. Each of these lines has its own general store located at some central point and managed by a storekeeper who reports directly to the general storekeeper. Under them are 35 division storekeepers, under whose direction the supplies are issued from the same number of division storehouses, located at all division headquarters and some division terminals.

In addition, the store department has direct jurisdiction over the fuel department and the stationery department, and exercises concurrent jurisdiction with the purchasing department over the work of reclaiming material. The fuel and stationery departments are operated as independent organizations under the general storekeeper, and, while the reclamation plants are operated also as separate organizations under the purchasing department, much of the reclamation work, such as collecting the scrap, preliminary sorting, etc., is performed by the store department and all reclaimed material is returned to stock and issued as new material. The importance of the supply car has grown to such an extent on the Santa Fe as to make necessary a general supply car storekeeper who reports directly to the general storekeeper.

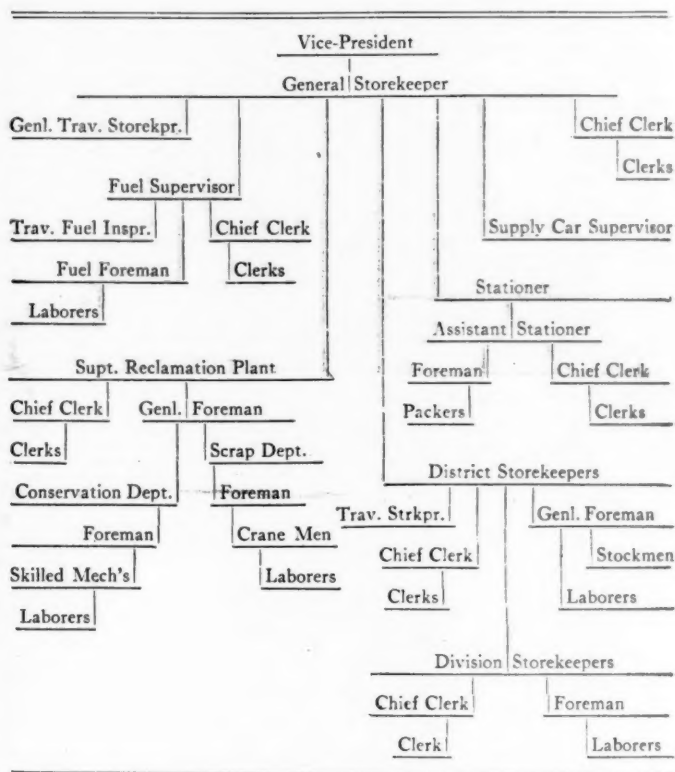
A singular feature connected with the Santa Fe store department is its closely knit organization and the close co-operation it maintains with the other departments of the system. The principal means adopted to secure this result are the regular informal meetings of all storekeepers affiliated with each general store and the annual system meeting of all store department heads. The storekeepers' meeting is sometimes attended by chief clerks and general foremen and an exchange of views covering all matters of material handling is had. In addition to the store department officers who are obliged to attend the annual system meeting, certain representatives of the purchasing, accounting, operating and mechanical departments are delegated to attend in order to work out in conjunction with the storekeepers such material problems as arise during the course of the year.

Material in Stock

The Santa Fe has some 40,000 items valued at approximately \$23,000,000 subject to call and approximately one hundred points of distribution. To have on hand at each of these points the proper supply of each item in their enormous variety and at the same time no greater quantity than is necessary is one of the principal problems of the department.

On the one hand the material is required to be delivered promptly when needed and on the other the investment in stock must not be out of proportion to the needs of the operating branches. These two functions are diametrically opposed to each other and so to handle them as not to sacrifice the one for the other is an end toward which the department works.

Material Classification. One of the means adopted to accomplish this purpose is the system of standards now in use. Every item of material is so classified that information as to size, grade, quality, quantity on hand and quantity ordered is available at all times. Experience has shown that railroad material readily resolves itself into a comparatively few



Santa Fe Store Department Organization

distinct classes. The Santa Fe has developed 31 different classes, based almost entirely on a physical classification, as follows:

STOCK "A"—FUEL, locomotive coal, locomotive fuel oil, miscellaneous fuel.

STOCK "B"—STATIONERY

STOCK "C"—MISCELLANEOUS

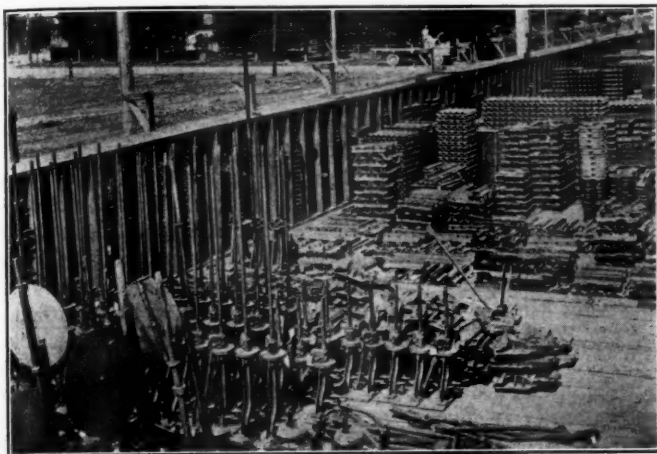
- (A) Shelf hardware, coach trimmings, lamps, tinware, packing, upholsterers' supplies, screws, etc.
- (B) Bolts, chains, nails, set screws, studs, nuts, washers, etc.
- (C) Pipe and fittings, pumps and parts, miscellaneous water service supplies, etc.
- (D) Air brake material.
- (E) Brass fittings, journal bearings, metallic packings, injectors, lubricators, gages, etc.
- (F) Oils, paints, varnishes, acids, waste, etc.
- (G) Bar iron, sheet steel and metals, tool steel, I-beams, channels, etc.
- (H) Locomotive forgings, springs, brake beams, flues, links, etc.
- (I) Car forgings, springs, brake beams, truck frames, etc.
- (J) Maintenance of way and bridge and building material.
- (K) Car grey iron, malleable and steel castings, bolsters, frames, couplers, brake shoes, etc.
- (L) Locomotive grey iron, malleable and steel castings, bolsters, frames, cylinders, couplers, brake shoes, etc.
- (M) Machinery, fire boxes, cabs, rods, pistons, superheaters, valve gears, coal pushers, stoves, etc.
- (N) All wheels, axles and tires.
- (O) Shop tools.
- (P) Furniture, belting, hose, glass, papers of all kinds, business car supplies, etc.
- (Q) Electrical material.
- (R) Signal material.
- (S) Telegraph material.

- (T) Lumber of all classes.
- (X) Ice.
- (Y) Material in process of manufacture.
- (S. A.) Suspense account.
- (W. S.) Mechanical department working stock.

RAIL AND TIES

- (U) New steel rail.
- (V) Old rail.
- (W) New cross ties.
- (Z) Miscellaneous scrap.

This classification is standard on the entire system. It is maintained in all accounting work, physical arrangements in the storerooms, platforms and yards, and on the inventories. It not only assists the storekeeper in knowing what he has on hand, but it is a very necessary factor in keeping his stock



Track Material Arranged to Facilitate Counting and Handling

down to a minimum. It also encourages a systematic method of handling and caring for material whereby a proper check may be made at any time with the least possible delay and expense. Physical appearances of the storage facilities are greatly improved thereby and surplus and shortages in stock can be determined easily.

Storehouses. All Santa Fe storehouses are standardized. They are built according to standard plans and the interior arrangements are fixed by the standard material classification. A general system store is maintained at Topeka, general line stores are located at a central point on each of the system lines and one or more division stores at convenient points on each division. The various storehouses differ only in their size and in the quantity of stock carried.

The new storehouses are one-story structures of the latest type of concrete and pillar design with steel reinforcement. Foundation piers are of the same material. The interior walls are 18 ft. high and are painted white with the windows located 11 ft. above the floor. This gives an unbroken wall space for shelving and at the same time solves the internal lighting problem, the height of the windows permitting an almost continuous line of glass. The light is also increased from continuous lines of sash in the roof monitor, which runs the entire length of the building and by these means four lines of light flow into the building from an elevated angle. The large storehouses enclose about 350,000 cu. ft. of air space and nearly 5,000 sq. ft. of window glass. Material shelving and cases are in no instance over 7 ft. high, permitting of easy access by workmen. Ample aisle spaces are provided and all parts of the storehouse can be reached by trucks.

Stock Maintenance. The problem of stock maintenance is complicated by present conditions. It is required that a three or four months' supply of miscellaneous material be maintained at all general stores. Larger division stores that obtain most of their supplies from the general stores, run with a two or three months' supply on hand; smaller stores usually have only one month's supply. To accomplish this

and prevent a shortage it is necessary for every storekeeper to keep in close touch with conditions in his territory. It requires the closest possible co-operation between the store department and operating and mechanical officers. Storekeepers must consult frequently with superintendents and master mechanics as to future material requirements and make a careful study of past issues and comparison with stock on hand and on order. The present chaotic condition of the markets has complicated the problem of stock maintenance.

Stock Books. The first essential in maintaining stock and analyzing future requirements is a stock book so designed that a concise list of material, correctly specified as to size, grade, quality, etc., with information as to the amount on hand and the amount ordered always available. The stock book in use on the Santa Fe covers only standard items, which are printed in the books according to the standard classification in the column provided for a description of the articles. Additional and obsolete items are written on blank pages with the exception of castings; obsolete patterns are listed with a notation showing the new pattern numbers. The result of this is that the Santa Fe has a stock book for the items of material in general use and the storekeeper is not hampered by thousands of unnecessary items. This stock



Interior of a Santa Fe Standard Storehouse

book is maintained at all storehouses and a consolidated stock book for the entire system is kept at the general system store.

The advantage of the printed books now in use over the written books is that they save clerical labor. It was necessary formerly to write the names of from 1 to 40,000 different items each year in the stock books, the amount depending upon the size of the storehouse. Printed books give a clear and uniform classification of material, as compared with the often illegible appearance of the written books. They also form a comprehensive material catalogue and insure uniformity in keeping stock and stock records at all storehouses.

Santa Fe stock books are of the loose-leaf form, making

it unnecessary for small stores to carry pages of material items on which they have no stock. Stockmen having charge of the various sections in a large store are also furnished with that portion of the stock book covering material carried in their section. As used on this road, the stock book is one of the principal protections against nearly all the problems that occur in connection with material handling.

Relations with the Mechanical Department

Excluding rail and ties, 70 per cent of all miscellaneous material is issued to the mechanical department. This in itself makes the relations between the two departments very close. During the past two years the vastly increased business has called into service practically every unit of power that the road possessed, with the result that new and more difficult problems have been created. As new equipment could not be obtained locomotives and cars have been utilized to the fullest extent possible which has meant a more rapid turning of power through the backshops and roundhouses. This condition has made the material question a vital one and a call for material usually represented an absolute necessity to keep the traffic moving rather than simply a desire to keep the power in shape. Normally from 10 to 15 per cent of the power allotted to a division is held for repairs. Thanks to the efficient methods of handling on the Santa Fe, this figure has shown only a slight increase during the past two years, only part of which can be ascribed to lack of material.

Under the conditions prevailing now the entire problem of supplying material resolves itself into a question of arriving at a proper working stock to be carried at a given point, and next, to accumulate that stock in the storehouse and then maintain it.

Stock Lists. An important factor in the prompt furnishing of shop material is the locomotive stock list. Future material requirements once were based almost entirely on past issues, but this method was found to be a very unsatisfactory one. The mechanical department was requested to outline what was considered a sufficient amount of material to carry in stock to take care of locomotive repairs on each division. The result was the Santa Fe locomotive stock list.

The amount of material specified to be carried in stock at each locality is based on the number of locomotives of each different class in service on the division, the size of the terminal, the facilities for handling the work and the distance from the market or general store. The stock list also includes such information as the interchangeability of castings and other parts and describes the substitution of new parts for old. While the operation of the stock list has been handicapped by market conditions, at those places where it has been followed closely and handled in a systematic manner it has reduced the stock balance, afforded better protection against shortages and given a definite idea of what material must be used up before introducing new standards. Except for emergency calls the stock list has proved invaluable on the Santa Fe.

Advance Information. The furnishing of advance information as to mechanical needs is another factor in maintaining an adequate stock. A system of inspection has been introduced in the shops which is intended to give advance information as to when an engine is ready to be shopped and what material will be needed for repairing it. Such information can usually be supplied from three to five months in advance. Also information as to changes in standards, the introduction of new and reinforced parts, and changes due to federal and state laws can be had in advance. This helps to reduce the material on hand and insures it being delivered promptly when needed. When new standards and changes in equipment occur, the general storekeeper sends out to all storekeepers a numbered bulletin showing in detail patterns, prints, and other information. They immediately take steps to see that the material is placed on order.

Schedules. A third factor is the compiling of a monthly schedule showing the material on order and the date of delivery. This is used in connection with the advance information mentioned. The schedule is arranged showing on what dates each piece of required material will be on hand.

For example: A certain class of engines on the Santa Fe was changed from compound to simple expansion. The mechanical department gave the approximate date the engines would be shopped and the purchasing department showed the approximate date each piece of material was to be delivered. A schedule was then made covering the delivery of the material and the routing of the engines through the shops. To further insure all material being available when work was begun on any locomotive, the material was assembled at the general store in sets and none of it was sent out until it had been thoroughly checked by a man well informed on the requirements. The same kind of schedule is made covering repairs to cars and other important work.

Standardization. A fourth factor is the standardization of locomotive, car and shop equipment. Standardization of parts does more to reduce the stock on hand than any other feature connected with material handling. For this reason the storekeeper is continually aiming to bring this about. Before standardization was brought to the point that it now is on the Santa Fe it was found almost impossible to keep the right kind of cylinder packing rings in stock on account of the large number of different kinds, there being a total of 181. By making a standard section for each bore this number was reduced to 82. This had an immediate effect on the quantity in stock. A large number of locomotive parts have been standardized, including rod keys, oil cups, hub liners, steam pipe rings, eccentrics, cab valves, gage cock drippers, blow-off cocks, pop valves and numerous others. This list is continually being extended with the co-operation of the store department.

Transferring Material. Still another factor is the transferring of material to protect certain locomotives when the locomotives are transferred. Each storekeeper has furnished him a list of engines which he is to protect with various kinds of material, and when that certain class of engines, or a majority of them, are transferred to another division, the material is also transferred and replaced by material that is applicable to the new assignment of power.

Shop Delivery

An investigation developed the fact that the methods formerly employed on the Santa Fe in delivering material from the storehouses to the shops were costly. It was the custom for the individual workmen to make a number of trips each day to the storehouse for supplies needed, resulting in a charge of from \$15 to \$50 daily, depending upon the size of the shop. To stop this practice sub-stores have been installed at all the larger shops and placed in charge of a material supervisor. These sub-stores carry all small items that are issued daily and a small quantity of some of the larger material which is delivered by laborers instead of high-priced mechanics. All requisitions are written by the material supervisor, the shop gang foreman merely writing an order. At the smaller shops that do not require a sub-store a messenger service is in use that delivers the material from the storehouse to the shops as needed.

Working Stock. Delivery of material for car repair work is simplified by carrying what is termed a "mechanical department working stock." This is a stock of material for current and convenient use to make repairs to freight, passenger and work cars and is available without a requisition. It is accounted for under the term "mechanical department working stock" and the value of the material is carried in this section only. It is maintained for the convenience of car repairers and is stored in the car repair sheds. This stock remains substantially constant, a three-weeks' supply being

always on hand. This represents about four per cent of the stock on hand at each storehouse.

Working stock has been the subject of much inquiry on the Santa Fe. At first it was not accounted for but owing to its value it was decided by the auditing department to keep a record of it, but still permit it to remain on the ground to avoid delay and the time spent by workmen in securing it. An inventory of all car repair material on hand was taken and all material over a 30-days' supply taken back into stock. This supply is maintained by car foremen furnishing a requisition at the close of each month to replenish the stock to its original quantity. A stock book of the material is maintained and it is put in charge of a supplyman at the large shops, where suitable facilities have been arranged to store it.

Relation with the Operating Department

The same principles that are applicable to the supply problems of the mechanical department can be applied to the relations between the store and operating departments. It requires the same amount of co-operation, the same advance information of future requirements and the same accuracy in references to obtain material promptly. However, the conditions under which they are applied are different.

Division storekeepers are required to keep in close touch with superintendents. They are kept advised of anticipated improvements and all other work where material will be required. On their frequent trips over the division they keep a lookout for surplus and obsolete material and advise the superintendent if any is discovered. They call attention to any wasteful, improper or extravagant use of material which may come to their notice.

Securing advance information for material needed in operating and construction work is difficult. No requisitions can be made until the authority for the work is granted and then immediate shipments are expected. Because of present conditions this is usually impossible. To overcome this, storekeepers are given copies of estimates with advice as to the prospects of the estimates being approved. A copy of the annual budget also is furnished the store department which is used as a guide for standard articles needed. However, it is not reliable as advance information for special material for the reason that many of the undertakings carried in the budget are postponed.

Distribution. On small jobs undertaken by operating forces, it is aimed to ship all the material required in one lot, or, if this is not possible, to advise superintendents when the bill of material has been filled. This is done by sending the consignee a copy of the waybill on which the material is detailed and he in turn checks it against his requisition copy. The Santa Fe has discovered that this is the most economical method of material distribution. Under the old system, for instance, when a bridge was being built, the creosoted material would come from one point, the bridge bolts from another, the T-rails from another, and often as many as eight separate shipments would be made. When the bridge gang arrived it sometimes found some essential material lacking, making it necessary to put the bridge into service incomplete, or abandon the work until the material arrived. It is estimated that the saving effected by shipping the material ordered for this class of work in one lot is 20 per cent of the former cost. This figure includes the cost of transporting men, material and outfit cars from the division headquarters to the point of work.

Supply Car

For the ordinary distribution of material to section foremen, agents, operators, pumpers and other operating units, the Santa Fe relies mainly on the supply car. This method

has been developed to its maximum efficiency on this road and has resulted in enormous saving, both in the cost of distributing supplies and in the prevention of loss and delay to the material itself.

Eight supply cars are operated on the system, each car taking care of the needs of from 1,000 to 1,500 miles of road. These cars make their rounds monthly and are in charge of a supply car storekeeper, assisted by two or three helpers. The supply car man in turn reports to a general supply car storekeeper, who is directly responsible to the general storekeeper.

(To be continued; the second part of the article will discuss Line Stock and Its Accounting; Ordering Material; Supplies and Obsolete Material; Material Returned to Stock, and Inventories.)

Win the War by "Staying at Home"

By Theodore H. Price

Actuary U. S. Railroad Administration.

DIRECTOR GENERAL McADOO's recent statement in which he appealed to the public to forego traveling that was unnecessary is given point by a recently published letter from the Associated Press correspondent in London which reads as follows:

"The recent curtailment of railway traveling facilities is making itself increasingly felt at the big London stations, where, during the week-end, long lines of travelers form at the booking office hours before trains are scheduled to start.

"No extra trains are being put on for the holidays, and as ticket offices are closed as soon as the seating capacity of the train is full, hundreds are left waiting.

"On one Lancashire railway tickets for popular seaside resorts have to be purchased two weeks in advance."

If it be true that misery loves company that portion of the American public who are complaining at the crowded condition of the passenger trains here may find some consolation in the fact that similar conditions prevail in England.

The truth is that it is not possible to put a quart in a pint bottle either in England or in the United States, and although the passenger traffic officials there, as here, are doing all they can to cope with the situation the effective remedy is in the hands of the public itself. It is very simple and may be described in the sentence "Stay at home unless travel is unavoidable."

During the month of July the railroads were called upon to move 1,100,000 troops for the government, as well as those soldiers and sailors who were traveling on their own account.

The workers in the service of the government who must be moved about from place to place impose a further tax upon the transportation facilities of the railroads. It is important that these men should travel in comfort and that they should be supplied with sleeping cars on long journeys. New cars cannot be built in a night and as a matter of fact they are at present unobtainable because the labor and material required in their construction is not to be had.

The passenger equipment of the railroads when they were taken over by the government was barely equal to the demands then made upon it. It cannot be enlarged at present without restricting some necessary war activity. Those who travel unnecessarily are therefore needlessly over-taxing the railway service, are making themselves and others who must travel uncomfortable, and are really impeding the prosecution of the war. To "Stay at home" has now become a patriotic duty and every one who feels disposed to "take a trip" these days ought to seriously ask himself whether it is necessary or cannot be postponed before he buys his ticket.

If this habit of self-examination becomes general the congestion of passenger traffic will disappear, for there are lots of journeys that are a waste of both money and time, and

"Home Sweet Home" is a pretty good and restful place after all. Those who feel an irresistible desire to roam may be able to control themselves if they will re-read "Prue and I," the charming story in which George William Curtis describes the imaginary journeys of an old book-keeper and his wife who, being unable to afford the cost of travel, found exquisite pleasure in imagining that they were visiting the places described in the books of celebrated travelers.

Railroad Men's Mountain Home Association

THE RAILROAD MEN'S MOUNTAIN HOME ASSOCIATION, the activities of which were described in the *Railway Age* of May 24, has selected a representative board of governors, composed of the following men prominent in transportation circles:

- Hon. Simon Bamberger, governor of Utah.
- H. W. Belnap, manager Safety Section, Railroad Administration.
- B. E. Chapin, editor, The Railroad Employee, Newark, N. J.
- G. P. Conard, secretary, Ass'n of Transportation & Car Accounting Officers, New York.
- E. H. DeGroot, assistant manager, Car Service Section, Railroad Administration.
- Samuel O. Dunn, editor, *Railway Age*, Chicago.
- J. E. Duval, general superintendent transportation, Grand Trunk System, Montreal.
- Carl R. Gray, director, Div. of Operation, Railroad Administration.
- Hon. Otto Mears, president, Silverton Railway.
- Frank Nay, comptroller, Rock Island System, Chicago.



One of the Cottages

- J. P. O'Brien, federal manager, Oregon-Washington R. R. & Navigation Company.
 - W. L. Park, general manager, Chicago Great Western.
 - J. S. Pyeatt, federal manager, Railroad Administration, Dallas, Tex.
 - D. H. Rawson, general manager, American Railway Express Company, Omaha, Neb.
 - H. E. Remington, editor, Rock Island Employees' Magazine, Chicago, Ill.
 - Marshall B. Smith, State Board of Capitol Managers and Former Receiver, Denver, Laramie & Northwestern, Denver, Colo.
 - B. L. Winchell, southern regional director, Railroad Administration, Atlanta, Ga.
- In addition to the roads mentioned in the article of May 24 as having issued circulars to their employees, several

others have taken similar action, affording their men the opportunity to remit either direct to the First National Bank of Denver or to contribute small amounts through the treasurer of the company.

The Rock Island Lines are now giving consideration to the erection of a "Rock Island Hut" through contributions of employees, with prospects of immediate success which will add to their record of achievement and provide a cottage where the Rock Island boys will always feel at home.

Actual work on the buildings and grounds is proceeding very satisfactorily. The Wyoming Shovel Works of Wyoming, Pennsylvania, anticipating the needs of the home, has donated a supply of shovels to meet all requirements.

The opportunities afforded by the Railroad Men's Mountain Home for rest and recuperation have been thoroughly enjoyed for the past six weeks by a man who was engaged in war work in France for about a year. He and his family enthusiastically endorse the enterprise and the ideal conditions under which the returning railroad soldiers may regain health and strength.

The plans for the home have been submitted to Lieutenant-Colonel Harry E. Mock of the War Department, and after due consideration he has endorsed the project in a letter to the directors from which the following is an extract:

"Therefore, if this Mountain Home for Railroad Men will give these disabled soldiers from the industrial army an opportunity to once more regain their health and become independent members of society, it will be one of the greatest benefits to those whom it serves.

"As president of the American Association of Industrial Physicians and Surgeons it gives me the keenest pleasure to commend this great undertaking."

One of the officers of the Railroad Administration has suggested that a life membership in the association be created, payable at the rate of \$100 per annum for five years, which would entitle the member to all the benefits of the home and provide health insurance at a comparatively nomi-



Looking South from Railroad Men's Mountain Home

nal cost, as the Railroad Men's Mountain Home is a non-profit organization and will afford every privilege at the minimum cost.

The board of trustees is giving consideration to this feature, and will at all times welcome suggestions from railroad men in the interests of the home.

ARE YOU PREPARING to subscribe to the Fourth Liberty Loan, the campaign for which begins on September 28 and closes October 19?

DIRECT FRENCH MAIL TRAINS.—Press despatches state that French mail trains were operated on September 2 between Paris, Calais, and Dunkirk, by way of the direct line through Amiens, instead of the roundabout route forced by the German drive of last March and April.

Doings of the United States Railroad Administration

Railroad Employees Ordered to Keep Out of Politics; Director General Meeting With Eastern Officers

WASHINGTON, D. C.

IN ACCORDANCE WITH HIS POLICY of gaining a first hand knowledge of railroad conditions, Director General McAdoo left Washington on Wednesday for New York to meet on Thursday with the regional director, the district directors and federal managers of the Eastern region for the purpose of discussing questions connected with the railroads under federal control in that region. Afterwards the director general will go to New England for an inspection of terminal facilities at Boston and railroads in New England and also the Cape Cod Canal, recently taken under federal control. After leaving New England he will go to Pittsburgh for a meeting with principal officers of railroads in the Allegheny region and later probably will visit roads in the Pocahontas region.

He has already met with the officers of roads in the Northwestern and Central Western regions and has inspected a number of the lines in those regions. The director general will devote himself to railroad affairs during the trip and because of the pressure of official business has been forced to decline all invitations of a social nature.

Railroad Men to Abstain from Politics

Specific orders that railroad men are to keep out of politics were given by Director General McAdoo to all officers and employees in the railroad service of the United States, in a statement issued on September 1. Mr. McAdoo said:

The approaching federal and state elections, including the primary contests connected therewith make it both timely and necessary that the attitude of the director general towards political activity on the part of officers and employees in the railroad service should be clearly stated.

It was a matter of common report that railroads under private control were frequently used for partisan political purposes; that railroad corporations were frequently adjuncts of political machines and that even sovereign states had been at times dominated by them. Contributions to campaign funds and the skillful and effective coercion of employees were some of the means by which it was believed that many railroads exerted their power and influence in politics. Scandals resulted from such practices, the public interest was prejudiced and hostility to railroad managements were engendered.

Now that the government controls and operates the railroads, there is no selfish or private interest to serve, and the incentive to political activity on the part of the railroads no longer exists.

Under government control there is no inducement to officers and employees to engage in politics. On the contrary, they owe a high duty to the public scrupulously to abstain therefrom. It is therefore announced as a definite policy of the United States Railroad Administration that no officer, attorney or employee shall

1. Hold a position as a member or officer of any political committee or organization that solicits funds for political purposes.
2. Be a delegate to or chairman or officer of any political convention.
3. Solicit or receive funds for any political purpose or contribute to any political fund collected by an official or employee of any railroad or any official or employee of the United States or of any state.
4. Assume the conduct of any political campaign.

5. Attempt to coerce or intimidate another officer or employee in the exercise of his right of suffrage. Violation of this will result in immediate dismissal from the service.

6. Become a candidate for any political office. Membership on a local school or park board will not be construed as a political office. Those desiring to run for political office or to manage a political campaign must immediately sever their connection with the United States Railroad Service.

I am sure that I can count on the loyal co-operation of all officers, attorneys and employees engaged in the operation of the railroads under federal control, to carry out in letter and spirit the policy here announced. This policy is intended to secure to all of them freedom of action in the exercise of their individual political rights, and, at the same time, to prevent any form of hurtful or pernicious political activity.

Let us demonstrate to the American people that under federal control, railroad officers, attorneys and employees cannot be made a part of any political machine nor be used for any organized partisan or selfish purpose.

Let us set such a high standard of public duty and service that it will be worthy of general emulation.

The director general has received many inquiries as to the scope of the new order from railroad men who are now candidates for office, and in reply to one who is running for nomination as lieutenant governor of a western state. Mr. McAdoo telegraphed that he might take part in the primary election, but that if he were nominated he would be required to resign his railroad position.

Advances to Railroads

Director General McAdoo on September 1 issued a statement giving an accounting in part of the disbursements of the Railroad Administration above current expenses of operation, out of earnings of railroad properties, from current balances taken over and from the Treasury's revolving fund, amounting to between \$800,000,000 and \$900,000,000, from January 1 to September 1, and also of the advances made by the Railroad Administration to railroad companies from April 1 to September 1. The director general also took occasion to deny that the Railroad Administration has been withholding standard rentals pending the execution of the contracts between the railroads and the government, and says that the equivalent of the standard rentals, which for the first eight months of the year amounted to approximately \$650,000,000, has already very largely been paid to the railroads under governmental control.

The total amount of money which the United States Railroad Administration has advanced since April 1, 1918, to all railroad companies (exclusive of the current earnings of the roads, applied directly by the individual roads to their current expenses and corporate needs) was \$241,851,420 to 64 different roads or systems, of which the amount advanced during the month of August was \$38,137,370.

Of the total amount advanced from April 1 to September 1, \$202,297,660, was taken from the \$500,000,000 revolving fund and \$39,553,760 was taken from the surplus earnings turned over to the director general by the limited number of roads whose receipts for the period exceeded their needs.

The total amount of money turned over to the director general April 1 to September 1 by roads reporting surplus earnings was \$62,845,699, but of the amount thus turned

over \$29,200,699 was returned to roads temporarily making the deposits, these same roads having subsequently called upon the director general to advance to them considerable sums in addition to the return of the deposits which they had temporarily made with the Railroad Administration.

The only railroads or systems which have deposited funds with the director general and have not asked for the return of any portion of the funds thus deposited were the following:

Atlantic Coast Line and Louisville & Nashville....	\$8,450,000
Atchison, Topeka & Santa Fe.....	3,300,000
Northern Pacific	2,500,000
Duluth, Missabe & Northern	2,400,000
Union Pacific System	2,100,000
Norfolk & Western	1,500,000
Bessemer & Lake Erie.....	1,500,000
Chicago & North Western	1,500,000
Elgin, Joliet & Eastern	1,500,000
Duluth & Iron Range	900,000
Fort Worth & Denver City	700,000
Pere Marquette	500,000
El Paso & Southwestern	500,000
Chicago & Eastern Illinois	300,000
Spokane, Portland & Seattle	300,000
Richmond, Fredericksburg & Potomac.....	300,000
Lehigh & New England	300,000
International & Great Northern	150,000
Grand Rapids & Indiana	100,000

Among the other railroads depositing funds with the director general, which have not already gotten back sums as great or greater than those thus deposited, were:

	Amount deposited in excess of amount gotten back
Southern Pacific Lines	\$2,000,000
Colorado & Southern.....	1,109,000
Chicago, Burlington & Quincy	400,000
St. Louis-San Francisco.....	382,000
Hudson & Manhattan	100,000
Vicksburg, Shreveport & Pacific.....	364,000
Alabama & Vicksburg	490,000

During the month of August the director general made the following advances to the railroads named, over and above their current earnings:

Pennsylvania Railroad Lines	\$9,500,000
Baltimore & Ohio	4,500,000
Illinois Central	2,700,000
Seaboard Air Line	2,000,000
Buffalo, Rochester & Pittsburgh.....	1,800,000
Missouri Pacific	1,750,000
Chicago, Burlington & Quincy	1,600,000
Philadelphia & Reading	1,400,000
Southern Pacific	1,300,000
Chicago, St. Paul, Minneapolis & Omaha.....	1,200,000
Chicago, Milwaukee & St. Paul.....	1,000,000
Chesapeake & Ohio	1,000,000
Erie	900,000
Wheeling & Lake Erie.....	700,000
Grand Trunk Western Lines.....	621,000
Wabash	575,000
Chicago Great Western	507,660
Florida East Coast	500,000
Indiana Harbor Belt	500,000
Kansas City Southern	500,000
Minneapolis & St. Louis.....	500,000
New York, Ontario & Western.....	400,000
St. Louis-San Francisco Lines.....	308,000
Cincinnati Northern	300,000
Central New England	300,000
Southern Railway Lines	245,000
Chicago, Terre Haute & Southeastern.....	229,201
Missouri, Kansas & Texas of Texas.....	225,000
Gulf, Mobile & Northern	200,000
Kansas City, Mexico & Orient.....	180,000
Western Maryland	169,509
Vicksburg, Shreveport & Pacific.....	136,000
Pittsburgh & Shawmut	110,000
Old Dominion Steamship Company.....	95,000
Ann Arbor	55,000
San Antonio, Uvalde & Gulf.....	45,000
Colorado & Southern	41,000
Franklin & Pittsylvania	35,000
Alabama & Vicksburg	10,000

The total amount advanced by the director general to all railroad companies from April 1 to September 1, 1918 (exclusive of the current earnings immediately applied by the respective companies), was \$241,851,420. The advances were made to the following roads:

New York, New Haven & Hartford.....	\$46,964,000
New York Central Lines.....	40,300,000
Pennsylvania Railroad Lines.....	40,000,000
Chicago, Milwaukee & St. Paul.....	15,725,000
Baltimore & Ohio	13,500,000
Illinois Central	12,450,000
Erie	8,400,000
Chicago, Rock Island & Pacific.....	6,000,000
Seaboard Air Line	4,350,000
Denver & Rio Grande	4,100,000
Southern Railway Lines	3,940,000
Southern Pacific Lines.....	3,800,000
Chesapeake & Ohio	3,750,000

Lehigh Valley	3,500,000
Wabash	3,225,000
Chicago, Burlington & Quincy.....	3,100,000
Missouri Pacific	2,750,000
Missouri, Kansas & Texas Lines.....	2,645,000
Buffalo, Rochester & Pittsburgh.....	2,600,000
Delaware & Hudson	2,000,000
Philadelphia & Reading.....	1,400,000
Minneapolis & St. Louis.....	1,350,000
Chicago, Indianapolis & Louisville.....	1,325,000
Chicago, St. Paul, Minneapolis & Omaha.....	1,200,000
St. Louis-San Francisco Lines.....	1,118,000
Hudson & Manhattan	1,000,000
Central of Georgia	750,000
Indiana Harbor Belt	720,000
Wheeling & Lake Erie	700,000
Grand Trunk Western Lines.....	621,000
Chicago & Alton.....	600,000
Norfolk Southern	540,000
Terminal Railroad Ass'n of St. Louis.....	525,000
Chicago Great Western	507,660
Hocking Valley	500,000
Florida East Coast	500,000
Kansas City Southern	500,000
St. Louis Southwestern	500,000
New York, Ontario & Western.....	400,000
Ann Arbor	330,000
Central New England	300,000
Kansas City, Mexico & Orient.....	300,000
Central Vermont	285,000
Detroit, Toledo & Ironton.....	238,775
Chicago, Terre Haute & Southeastern.....	229,201
Gulf, Mobile & Northern	200,000
San Antonio & Aransas Pass.....	200,000
Chicago Junction	200,000
Atlanta, Birmingham & Atlantic	189,000
Western Maryland	169,509
Illinois Southern	160,000
Belt Railway of Chicago.....	155,000
Duluth, South Shore & Atlantic.....	150,000
Vicksburg, Shreveport & Pacific.....	136,000
New York, Chicago & St. Louis.....	132,275
New Orleans Great Northern.....	120,000
Chicago & Western Indiana	115,000
Pittsburgh & Shawmut	110,000
Old Dominion Steamship Company.....	95,000
Washington, Brandywine & Point Lookout.....	50,000
San Antonio, Uvalde & Gulf.....	45,000
Colorado & Southern	41,000
Franklin & Pittsylvania	35,000
Alabama & Vicksburg	10,000

Of the funds thus advanced to date, over 52 per cent went to three systems, the New Haven, the New York Central, and the Pennsylvania.

The director general desires to correct an impression which prevails in some quarters to the effect that the United States Railroad Administration is withholding, or has been withholding, the standard rentals due to the various railroads under government control, pending the execution of contracts between the railroads and the government, and that the omission of any railroad corporations to settle their debts or claims is due to any omission by the Railroad Administration to pay the accrued rentals.

The fact is, says the statement, that the equivalent of the standard rentals which for the first eight months of the current year, amounted to approximately \$650,000,000, has already very largely been paid to every railroad company in the United States under government control, and in many cases the director general in addition to paying these roads an amount equal to 90 per cent of their standard rental (which payments in advance of the execution of contracts are permissive and not compulsory under the railroad act) has advanced large additional sums of money to these railroad corporations to enable them to meet maturing bond issues which they and their financial agents were unable, under existing conditions, to provide for, and to pay large sums for new equipment and additions and betterments.

The total amount of money, therefore, which the director general has disbursed, over and above all current expenses of operation, out of earnings of the railroad properties since January 1, and from current balances taken over on January 1, 1918, and from the Treasury's Revolving Fund, up to September 1, 1918, is estimated at between \$800,000,000 and \$900,000,000.

In addition to the large sums which have been advanced directly to railroads, either on account of compensation or as loans, the director general has advanced on account of orders placed by him for locomotives and cars now under construction, and which are being put in service as rapidly as completed, the further sum of \$11,727,870.

Rules for Submission of New Devices

The Division of Operation has issued a circular prescribing the following rules to be observed in submitting new devices or inventions to the Railroad Administration for investigation:

Any person desiring to submit any apparatus or device to the United States Railroad Administration at Washington, for the purpose of having it passed upon and investigated, should forward complete specifications and detail drawings, showing fully and clearly the construction, application, and method of operation of said apparatus or device. The drawings should be made of convenient size for handling and filing, and drawings not larger than 8 in. by 10½ in. are preferred. Large drawings or prints must be multiples of this size.

The specifications and plans should be accompanied by a statement showing the following:

1. Name of appliance or device.
2. Name and address of proprietor.
3. Number and date of United States patent or patents.
4. Purpose of the appliance or device.
5. Brief statement of how the purpose is carried out.
6. General description.
7. Statement of relation to other appliances or devices.
8. Name of railroad or railroads on which used or tried and length of time in use.
9. Name of town, district, or railroad division where used or tried.
10. Name of railroad officers of whom inquiry may be made.

All plans, specifications, drawings, and other descriptions which are furnished for examination become a part of the United States Railroad Administration's records and may be retained in its files.

When examination has been completed the papers furnished for such examination will not be returned; for that reason original patents, tracings, or other papers of that nature, which may be of particular value to inventors or proprietors, should not be furnished; instead, copies of patents, blueprints, or other descriptive papers of which duplicates can be obtained by the proprietor should be sent. The United States Railroad Administration can furnish no protection of the inventor's or proprietor's rights in any device submitted; therefore, plans should not be submitted until the rights of the inventor or proprietor are fully protected by patent or otherwise.

It is not necessary to submit models of devices. If for any reason it is desired to do so, however, models may be furnished, provided the proprietor pays all transportation charges. After examination models will be returned if the proprietor so requests, but this will also be done at the proprietor's risk and expense; otherwise models will be destroyed. In every case, however, whether or not models are supplied, complete detailed plans and specifications must be furnished; no report will be based on examination of a model alone.

When complete plans of any appliance or device have been furnished they will be placed under examination; after this examination has been completed the person submitting the device will be informed of the results thereof and the conclusions reached.

Arrangements for tests will not be made until an examination of plans discloses the necessity or desirability of conducting a test under service conditions. In case a test is to be made the apparatus must be furnished, installed, and operated without expense to the government.

Correspondence regarding matters of this nature should be addressed to United States Railroad Administration, Frank McManamy, assistant director, division of operation, Washington, D. C.

Nothing in the foregoing is intended to prohibit any rail-

road from testing and developing devices invented by its employees, or testing other devices which, in the opinion of the officers of the railroad, have sufficient merit to warrant it.

The Director General's Labor Day Message to Employees

The director general on Sunday last sent a Labor Day message to all regional directors, in which he asked them, insofar as possible, to permit as many railroad employees to participate in the Labor Day celebrations throughout the country as would not hamper essential railroad operations.

"In view of the colossal war in which America is a party combatant and of the gravity of the issues involved, concerning as they do the lives and liberties of the people of the world, the celebration of Labor Day, 1918, possesses a special significance," he said.

"Not only is the welfare of labor concerned in this war, but the welfare of every class of people in America and throughout the world. The millions of America's splendid sons we are sending to Europe to settle these issues in our favor cannot do their part of this great job unless we, each and every one of us who stay at home, do our part equally well and on time. Any failure to produce at home the things our men must have if they are to fight successfully would mean disaster. Such a disaster would be less appalling in the injury to, or destruction of, our material interests than in the subjugation, if not the destruction of the noble ideals for which America stands and sheds her blood. These ideals are the very foundation of Christ's doctrines and of modern Christian civilization. It is inconceivable that such a calamity as a German victory can befall the world since America entered the conflict unless we at home fail to do our duty and our full share. I have no doubt about America's performance of her duty, and that means that I have no doubt of the patriotism and willingness of every class of our people, including labor, to strive and sacrifice and fight on until the glorious victory is won.

"The railroadmen of the United States have a duty of transcendent importance—the duty of keeping alive and efficient the transportation system of the country. Without adequate and uninterrupted railroad service, delivered on time all the time, the essential war industries of the nation will be helpless and the sacrifices of blood and treasure will be of no avail. The railroads of the United States are the most vital organ of our entire industrial and economic life. They must function at the highest point of efficiency, and I know that I can count on the loyalty and patriotic co-operation of the railroad employees of the United States in rendering to our beloved country the best service of which they are capable.

"Let us on Labor Day, 1918, rededicate ourselves to the noble cause for which we fight. Let us resolve never to stop until military oppression and all that it represents is wiped from the face of the earth. Let us stand shoulder to shoulder with our splendid sons, whose unbroken ranks in France have stopped the Kaiser and given him a new conception of our fighting power. America's triumph in this war will then be inevitable. America's victory will give a new meaning to liberty and democracy throughout the world."

Tank Car Situation Continues Good

The director general continues to receive favorable reports concerning the tank car situation. On August 29 he received one saying that the surplus of tank cars in the Mid-Continent and Texas-Louisiana fields continues to remain in a condition whereby all demands for equipment can be promptly met. The daily movement from these two fields averages about 1,300 cars per day. This may be increased slightly during the next few weeks on account of the large demands of the West and Northwest for agricultural activities, but no ab-

normal movement from the Western field to the Eastern seaboard is anticipated for the immediate future.

Third Class for War Department Shipments

For a period of three years or more prior to federal control the railroads of the country, on the one hand, and the war department on the other, were in dispute as to the proper freight rates to apply on military impedimenta, the roads contending for a second class rate, and the government for a fourth class rate. Neither side being willing to concede the reasonableness of the claim of the other, it was agreed by the two parties early in November, 1917, to submit briefs to the Interstate Commerce Commission as a referee. This procedure would have necessitated a more or less exhaustive and expensive investigation on the part of the commission.

However, before the briefs had been prepared the matter was brought to the attention of the Division of Traffic. After weighing the arguments carefully the Railroad Administration recognized merit in the positions of both the carriers and the war department and suggested to the war department, for account of the carriers under federal control, a compromise basis of third class, minimum weight 24,000 lb. per shipment, which the war department readily accepted.

This disposition of the case makes for uniformity of practice by all carriers, and a simplified method of accounting both with the carriers and with the war department.

Maintenance of Air Brakes

The regional directors are now giving special attention to the proper maintenance of air brakes and are addressing letters to their federal and general managers as follows:

The proper maintenance of air brakes on all classes of equipment is an important matter from many points of view and is a subject that is not given the careful attention it should be given. In addition to the impossibility of properly handling and controlling trains with poorly maintained brakes and leaky pipes, hose and other apparatus, fuel losses from these causes are startling. It is estimated that there is a waste of more than 6,000,000 tons of coal annually due to train pipe and other air leakage. The shortage of coal makes it necessary now, more than ever before, to bring about greater efficiency. The proper maintenance of air brake equipment will not only contribute to a large extent in fuel saving, but will also reduce maintenance costs and improve your train operation.

The following should be rigidly enforced:

Ample time allowed for inspection of air brakes.

All leaks and defects properly repaired.

Air brakes should be thoroughly gone over, cleaned and tested on all cars on shop or repair tracks and all leaks eliminated.

Train pipes, cylinders and all parts should be securely clamped. This is a matter that is given little attention.

Careful inspection of hose should be made to detect porous hose and to see that hose fittings are securely clamped. Poorly clamped fittings often result in hose being blown off, resulting in wrecks or serious damage to equipment.

Wherever possible train yards and shop tracks should be equipped with yard testing plants to enable inspectors to test cars and trains standing in the yards and make repairs often before trains are made up, resulting in reducing of terminal delays and overtime.

The leakage on outbound trains after a service reduction of 15 lb. has been made and valve placed on lap, should not exceed 8 lb. per minute. If leakage exceeds that amount the trouble should be corrected.

M. C. B. Rules covering the inspection and maintenance of air brakes should be rigidly enforced.

8052 Cars of Georgia Peaches

Director General McAdoo last Friday received through the Division of Operation a report on the handling of the Georgia peach crop during the season now nearing a close, in the form of the following letter sent by B. J. Christman, general manager of the Georgia Fruit Exchange, to B. L. Winchell, Southern regional director:

The crop was unprecedented in this or any other of the peach growing states, and very largely exceeds any previous crop in Georgia. Roughly estimated, the returns to the growers will approximate \$7,950,000. A comparison of the carload shipments from this territory for the past several years will perhaps interest you. It is as follows:

1910.....6,265 cars	1915.....4,468 cars
1911.....1,145 cars	1916.....3,199 cars
1912.....7,365 cars	1917.....3,869 cars
1913.....1,219 cars	1918.....8,052 cars
1914.....4,020 cars	

The fact that the large crop of the season just closing was marketed with such satisfactory results, is largely due to the splendid service rendered by the railroads under your direction, and it is with the approval of the

directors of the Exchange that I write you to express the appreciation of our members for the very efficient service rendered as a whole by the railroads, and which it is recognized was accomplished under exceedingly adverse conditions by comparison with previous years.

Division of Capital Expenditures Securing 1919 Figures

R. S. Lovett, director of the division of capital expenditures, on August 27 sent out D. C. E. circular No. 12 asking for detailed information concerning the capital stock, funded debt, amounts chargeable to capital account over the last three years, estimates for 1918 expenditures, etc., as well as other pertinent information which might be of value in arriving at a complete understanding of the capital expenditures necessary in 1918 and 1919 and the means of paying for them. The items concerning which information is wanted are in detail as follows:

1. Capital stock authorized and outstanding.
2. If owned or controlled by any Class I roads, give name of roads and amount held by each.
3. Amount of funded debt authorized.
4. Amount of funded debt outstanding.
5. Rate or rates of interest.
6. Dates of issue and of maturity.
7. If principal or interest, or both principal and interest, are guaranteed, state full particulars, giving the names of the guarantors.
8. State from what source interest on payment of funded debt is obtained.
9. State the aggregate amount expended chargeable to capital account, during the calendar years 1915, 1916 and 1917 respectively.
10. What expenditures do you estimate will be made for capital account during the calendar year 1918.
11. What bonds are available for payment of capital expenditures.
12. If no bonds are available state manner in which it is proposed to finance capital expenditures.
13. If proprietary or tenant companies are liable under their agreements or contracts to furnish funds for capital expenditures give full particulars.
14. Furnish condensed balance sheet as of June 30, 1918.
15. State basis upon which operating expenses are distributed between the tenant lines and the approximate annual percentage each assumed in last calendar year.
16. Furnish such operating statistics, if any, as you may have compiled as of June 30, 1918, as will afford a clear and comprehensive understanding of the business transacted.
17. Any other pertinent information which you believe will be of value in arriving at a complete understanding of the capital expenditures necessary in 1918 and 1919 and the means of paying for the same.

Trial Balances of Federal Books Wanted Promptly

In P. S. & A. Circular No. 27 the director of the division of public service and accounting has admonished the chief accounting officers to be more prompt about reporting information respecting cash and other transactions and about submitting trial balances of the federal books as of June 30, 1918, and has made certain suggestions that may help in getting at these figures to best advantage. The circular says:

Many chief accounting officers have failed to comply with the provisions of P. S. & A. Circular No. 18, dated July 15, 1918, which requires carriers to report certain information respecting cash and other transactions, and the submission of a trial balance of the federal books taken as of June 30, 1918, all of which was to be forwarded on or before August 1, 1918.

Accounting officers, apparently, have failed to fully appreciate the importance of immediately interpreting and complying with the provisions of General Order No. 17. Failure promptly to separate the accounts, as provided in that order, has prevented the furnishing of the required information, as well as the trial balance of the accounts on the federal books. It has, also, prevented the furnishing of answers to questions 28 and 29, which deal with lap-over revenue and expense items.

It is important that the information solicited in that circular, and the trial balance of the federal books requested therein, be quickly obtained, and it is desired that answers to questions 28 and 29, if they cannot be reported at this time, be later submitted.

It is recognized that a considerable amount of detail work is involved in the ascertainment of all lap-over items, and that unless they have already been ascertained, some time must elapse before all of the lap-over items can be properly spread upon the federal books. To the end that the spreading of lap-over items may not delay the rendition of the return to P. S. & A. Circular No. 18, it is herein suggested that the chief accounting officer have the accounts separated in accordance with the provisions of General Order No. 17, except that the ascertainment of the detail of lap-over items may be deferred until the other accounts are completely stated on federal books and a trial balance as of June 30, 1918, submitted.

When the amounts of lap-over items by months have been ascertained, the total thereof shall be stated in the accounts in the months subsequent to June, supported by a detail record thereof, which shall show separately by months the amounts of lap-over items included in the accounts (name of corporation) expenses prior to January 1, 1918, and (name of corporation) revenues prior to January 1, 1918, as the case may be. Upon stating the accounts as provided herein, a report of lap-over revenues and expenses as of June 30, 1918, shall be submitted to the undersigned.

This modification of P. S. & A. Circular No. 18 should enable accounting officers to very promptly comply with the provisions thereof, and the date for reporting the information is hereby extended to September 15, 1918.

Inter-Road Freight Claims for Loss and Damage

The director general in order No. 41 has issued the following regulations relative to the investigation, payment and accounting for freight claims for loss and damage arising during federal control. These regulations will not affect the distribution of settlements involving any road not under federal control nor the distribution of claims clearly applicable to the period prior to federal control.

1. *Presentation of claims:* Effective September 1, 1918, claims for loss of or damage to freight shall, except as modified in this paragraph, be presented to and settled by the destination or the initial carrier. Claims filed with an intermediate carrier, through error, shall be immediately transmitted to the destination carrier and claimant so advised. An intermediate carrier clearly at fault may invite and adjust claims direct. Claims for fire or marine losses shall be referred for adjustment to the carrier responsible, and claimant so advised.
2. *Papers necessary to support claims:* Claims for loss of or damage to freight shall be made on the standard forms approved by the Interstate Commerce Commission. In the case of loss or damage, they shall be supported by original bill of lading, if not previously surrendered to carrier, original paid freight receipt, if issued, original or certified copy of invoice of value and all obtainable facts in proof of such loss or damage and the value thereof. If any necessary document is lost or destroyed, claimant shall file a bond of indemnity to cover.
3. *Method of adjustment:* The foregoing provisions having been complied with, loss and damage claims shall be adjusted with the claimant in accordance with the established legal liability, bill of lading, tariff provisions and federal regulations, by the carrier to which presented for the account of and without reference to the other carriers interested in the haul, before the completion of other investigations necessary for the purpose of locating responsibility or apportioning the amount paid.
4. *Car seal records:* Investigation for development of car seal records in connection with the apportionment of claims between carriers shall be discontinued.
5. *Loss or damage definitely located:* Claims for loss or damage definitely located, the legal liability for which has been established and payment made, shall be charged direct to carrier or carriers responsible therefor.
6. *Loss or Damage Unlocated:* Claims for unlocated loss or damage, the legal liability for which has been established and payment made, shall be apportioned to interested carriers on mileage basis, with minimum of ten miles for any carrier.
7. *Claims Involving Litigation:* Law expenses, including court costs, incurred in connection with the defense of an action where recovery is had, shall be apportioned among the carriers involved on the same basis as the claim. In the event there is no recovery, the law expenses shall be apportioned between the carriers interested on a mileage basis, minimum ten miles for any carrier, and subject to Paragraph 8, Minimum Debits.
8. *Minimum Debits:* Except as provided in Paragraph 5 hereof, the entire amount of any individual loss and damage claim shall be absorbed by the settling carrier, unless the amount chargeable against all other carriers under federal control in interest exceeds five dollars. Proportions less than one dollar against any one carrier shall, however, be absorbed by the settling carrier.
9. *Settlement Between Carriers:* On or before the tenth day of each month, paying carrier shall render a statement of amount due from each debtor carrier showing thereon the claim number, points between which shipment moved over debtor line, waybill reference and date, commodity, nature of claim and amount. The total amount of such statement shall be accepted by debtor carrier as final, except if it be found that an amount was included in statement in error, or a manifest clerical error, adjustment shall be made therefor in the subsequent statement, as prescribed in General Order No. 30. Manifest errors in claim payments should be brought to the attention of the debiting carrier.
10. *Monthly Statements:* Separate monthly statements shall be rendered for liabilities, which were incurred prior to January 1, 1918, and for liabilities, which were incurred subsequent to December 31, 1917. In no case shall a single statement include both prior and subsequent liabilities. Such statements rendered against debit carriers should be forwarded through the proper accounting officers of the carrier by whom they are prepared.
11. *Method of Payment:* Loss and damage freight claims shall be audited and paid on regularly audited vouchers in same manner as other operating expenses are vouchered. Such vouchers shall be approved for audit by the freight claim agent, and for payment by or under the direction of the officer designated to approve vouchers for payment. Provided, however, loss and damage freight claims may be paid by drafts drawn upon the federal or local federal treasurer having jurisdiction within the same limitations which are now in effect and authorized by the officer in charge of such authorization.
12. *Custody of Claim Papers:* Claim papers shall remain in possession of paying carrier, except that where individual claims are charged in full to another carrier, the papers may be sent to such carrier upon request. When documents supporting either paid or unpaid claims leave possession of carrier, they shall be plainly stamped with carrier's name and claim number.
13. *Notations of Exceptions on Waybills:* Loss or damage discovered at any point in transit shall be specifically noted on face of waybill, dated and signed in name of agent, conductor or other authorized employee, giving name of carrier responsible, or point where discovered if responsibility is located.
14. *Noting exceptions on paid freight receipts:* Agents delivering freight to consignee, when shortage or damage is known to exist, shall make

specific notation of extent and nature of the loss or damage on face of original paid freight bill and sign and date such notation in ink. When freight bears external evidence of pilferage or damage at time of delivery, a joint inspection with consignee or his representative shall, when practicable, be made at the delivery station and receipt taken in accordance therewith. Claim for value of freight checking short at destination shall not be paid until inquiry has been made of delivering agent and consignee to ascertain if shortage has since arrived or reached consignee through any source.

15. *Delivery of stray freight:* Astray freight (freight marked with name and address of consignee, but separated from regular revenue waybill) shall be immediately forwarded to marked destination on standard form of waybill, without charges (copy by mail to destination agent) and such waybill shall bear the notation "Astray Freight—Deliver only on presentation of original bill of lading or original paid freight receipt or other proof of ownership." Destination agent receiving astray freight shall immediately notify consignee to whom marked, and if regular revenue waybill is not received, delivery shall be made on presentation of proof of ownership prescribed and collection of tariff charges from point where shipment originated. Special efforts should be made to establish the ownership of perishable freight, in order to insure prompt delivery.

16. *Freight Claim Association rules:* Rules prescribed by the Freight Claim Association, except such as conflict with the regulations herein provided, shall govern all carriers under federal control until otherwise ordered.

Women's Service Section

Announcement has been made of the establishment of a Women's Service Section of the Division of Labor in charge of Miss Pauline Goldmark, as manager, with office at Washington. The manager of the new section will give consideration to conditions of employment of women on railroads under federal control. Miss Goldmark until recently was secretary of the Committee on Women in Industry of the Council of National Defense, New York. She was for five years secretary of the New York City Consumers' League and later secretary of the National Consumers' League.

Manager of Coastwise Steamship Lines Appointed

Director General McAdoo has announced the appointment, effective September 1, of H. B. Walker as federal manager of coastwise steamship lines, with office at Southern Pacific Pier 49, North River, New York, reporting to the Director, Division of Operation, and with jurisdiction over all departments of the following coastwise steamship lines now under federal control: Old Dominion Steamship Company, Ocean Steamship Company, Southern Steamship Company, Merchants' and Miners' Transportation Company, Mallory Steamship Company, Clyde Steamship Company. Southern Pacific Company—Atlantic Steamship Lines.

The director general also expressed his appreciation of the services of the Steamship Advisory Committee, which, with L. J. Spence as chairman, has been handling the coastwise service under a temporary organization up to this time, stating that Mr. Spence particularly, who remains with the Southern Pacific Company, has rendered excellent service.

C. A. Morse in Charge of Engineering and Maintenance

Announcement was made this week of the establishment of an engineering and maintenance department in the Division of Operation. Charles A. Morse, heretofore chief engineer of the Chicago, Rock Island & Pacific, with office at Chicago, has been appointed assistant director, Division of Operation, in charge of engineering and maintenance, effective September 1, and has assumed his new duties, with office in Washington.

500-Mile Mileage Book

There will be placed on sale on September 15 at the different ticket offices throughout the country a \$15 mileage scrip book to be sold for \$16.20, including the war tax. This book is identical in all features except size and price with the \$30 book that went on sale on August 20.

Light Loading of Flour

The Car Service Section has asked the railroads to report to it any cases of loading of flour shipments coming to their attention which do not follow the instructions for inspection or preparation of cars for flour shipments recently issued in

a circular of the cereal division of the milling section of the United States Food Administration. These rules are in accordance with loading rules of the American Railway Association. The railroads are instructed to give special attention to shipments of flour that must be transferred en route to insure proper loading in accordance with loading rules.

Organization of Bureau of Suggestions and Complaints

The Bureau of Suggestions and Complaints, which is being organized by Ballard Dunn as assistant actuary of the Railroad Administration, is rapidly getting started with its work and has received hundreds of letters in response to the announcement of its organization as published in the newspapers. Mr. Dunn is organizing a staff to handle the work, which now includes, in addition to T. T. Maxey, heretofore advertising agent of the Chicago, Burlington & Quincy, whose appointment was noted in last week's issue, J. F. Jarrell, publicity agent of the Atchison, Topeka & Santa Fe, and Eugene Howard Lamb, formerly general agent of the

hitherto manager of the property protection section, becomes counsel for the property protection work and Charles H. Patterson of Pittsburgh has received the title of counsel for claims.

Freight Train Operations for June

THE FIGURES FOR FREIGHT train operations on the Class 1 roads in June compiled by the Operating Statistics Section of the Railroad Administration show a considerable improvement over the figures for May and are comparable with those for April. The revenue ton miles handled in June totaled 34,336,702,777, a considerable increase over May, a less increase over April, but 3.2 per cent less than in June of last year. The freight train miles totaled 53,102,470 in June of this year, a decrease of 3.6 from June of last year. Tons per train, averaging 698, were the same as last year, but tons per loaded car totaling 28.3 represented an increase of 1.8 per cent.

Item	FREIGHT TRAIN OPERATION CLASS I ROADS UNDER FEDERAL CONTROL June					Six months ended June 30				
	1918	1917	Increase	Decrease	Per cent	1918	1917	Increase	Decrease	Per cent
Average miles operated—single track	225,612.89	225,264.88	348.01		0.2	226,956.52	226,767.88	188.64		*
Freight train miles	53,102,470	55,094,973		1,992,503	d 3.6	317,974,949	328,042,178		10,067,229	d 3.1
Loaded freight car-miles	1,310,237,891	1,384,755,437		74,517,546	d 5.4	7,302,643,871	7,921,743,019		619,099,148	d 7.8
Empty freight car-miles	651,671,964	632,304,360	19,367,604		3.1	3,313,610,858	3,329,373,112		15,762,254	d 0.5
Total freight car-miles—loaded and empty	1,961,909,855	2,017,059,797		55,149,942	d 2.7	10,616,254,729	11,251,116,131		634,861,402	d 5.6
Freight locomotive-miles	61,655,544	63,312,767		1,657,223	d 2.6	370,489,316	383,019,067		12,519,751	d 3.3
Revenue ton-miles	34,336,702,777	35,454,238,696		1,117,535,919	d 3.2	190,395,270,819	192,120,113,987		1,724,843,168	d 0.9
Non-revenue ton-miles	2,752,722,738	3,023,624,077		270,901,339	d 9.0	17,235,542,127	17,575,774,177		340,232,050	d 1.9
Average number of freight locomotives in service	31,673	31,366	307		1.0	31,197	30,805	392		1.3
Aver. number of freight locomotives in or awaiting shop	4,517	4,307	210		4.9	4,727	4,494	233		5.2
Average number of freight cars in service	2,438,756	2,363,821	74,935		3.2	2,410,907	2,315,223	95,684		4.1
Average number of freight cars in or awaiting shop	143,343	131,990	11,353		8.6	126,782	129,109		2,327	d 1.8
Home	76,844	100,193		23,349	d 23.3	66,952	79,404		12,452	d 15.7
Foreign	66,499	31,797	34,702		109.1	59,830	49,705	10,125		20.4
Tons per train	698	698				653	639	14		2.2
Tons per loaded car	28.3	27.8	0.5		1.8	28.4	26.5	1.9		7.2
Average miles per locomotive per day	64.9	67.3		2.4	d 3.6	65.6	68.7		3.1	d 4.5
Average miles per car per day	26.8	28.4		1.6	d 5.6	24.3	26.8		2.5	d 9.3
Per cent of empty car-miles	33.2	31.3	1.9		6.1	31.2	29.6	1.6		5.4
Per cent of freight locomotives in or awaiting shop	14.3	13.7	0.6		4.4	15.2	14.6	0.6		4.1
Per cent of freight cars in or awaiting shop	5.9	5.6	0.3		5.4	5.3	5.6		0.3	d 5.4
Total ton-miles:										
Per freight loco. per month	1,171,101	1,226,738		55,637	d 4.5	1,109,246	1,134,534		25,288	d 2.2
Per freight car per month	15,208	16,278		1,070	d 6.6	14,354	15,095		741	d 4.9

d Represents decreases. * Less than one-tenth of one per cent.

Chicago & North Western at Sacramento, and for the past four months in the office of Regional Director R. H. Aishton at Chicago. They have headquarters at Washington, D. C.

The First Standard Eight-Wheel Switcher Delivered

The American Locomotive Company delivered this week the first of the standard Eight-wheel switching locomotives which it has on order for the United States Railroad Administration. The locomotive was built at the Pittsburgh works and will be placed in service on the Toledo & Ohio Central.

Claims and Property Protection Section

The announcement of the establishment of the new Freight Claim Section noted in last week's issue has been supplemented by the announcement of another new section of the Division of Law, to be known as the Claims and Property Protection Section. This section will have jurisdiction over freight claims and prevention, property protection, now under the jurisdiction of the property protection section, and personal injury claims. John H. Howard, whose appointment as manager of the freight claim section was announced in last week's issue, has now been appointed manager of the new claims and property protection section. Philip J. Doherty,

For the six months ended June 30 there is shown a decrease of 0.9 per cent in revenue ton miles this year as compared with last. There was, however, a decrease of 3.1 per cent in freight train miles, an increase of 2.2 per cent in tons per train, of 7.2 per cent in tons per loaded car.

Increases in the number of locomotives both in service and awaiting shop are shown for both June and the six months including June as compared with the same periods for last year.

The decrease in revenue ton miles in June this year as compared with June last year is understood to be largely on the western and to some extent on the Southern roads. The Eastern roads showed increases and New England, in particular, made a good showing, both in increases in revenue ton miles handled and in increased load per car and per train mile.

It will be noted that the table gives only the totals for the entire country, the separation between the three districts, Eastern, Southern and Western as designated by the Interstate Commerce Commission, having been discontinued. It is understood that a separation has been made by regions but the totals for the regions have not been made public.

Director General Approves Compensation Contract

Also Issues Statement Outlining Reasons for Rejecting Certain Requests for Modifications

DIRECTOR GENERAL McADOO approved on Wednesday and announced on Thursday the form of a contract which the government is willing to make with the railroad companies covering federal control of the railroads and the compensation therefor. The form as announced was for companies without subsidiaries and was in the shape of standard clauses for use in the ordinary case, subject to the government's reserved right to insist on different provisions in cases obviously requiring a different treatment and to any changes of detail or phraseology that may prove necessary. There are certain questions relating to subsidiaries, terminals, industrial leases and other matters which are left for further treatment in the agreements with the individual companies.

The final draft includes several concessions made by Mr. McAdoo after hearing the objections offered by the representatives of the companies and of the Security Owners' Association to the drafts as prepared by the representatives of the Railroad Administration, and it is understood to be in such form as to be accepted by a majority of the roads, although it does not meet the most important objections advanced by the National Association of Owners of Railroad Securities which it has been intimated may attempt to enjoin some of the companies from accepting it. The final draft was discussed at a meeting attended by many railway counsel and executives at Washington on Wednesday and was to be further considered at a meeting of the railway executives' advisory committee at New York on Friday, after which the law committee, headed by Alfred P. Thom, which has represented the railroads in the negotiations was to give an opinion as to its acceptance by the various companies. While Mr. McAdoo acceded to some of the contentions submitted for his consideration by counsel representing the railroads and the security owners, he rejected their most important requests for modifications, particularly those of the security owners, and in a supplementary statement gave his reasons for doing so. The contention for a modification of the acceptance clause which waives the right of a railroad to litigate for loss of good will, diversion of traffic, etc., was rejected, as well as the contention that no deduction should be made from the compensation to pay for deferred maintenance, additions and betterments and road extensions, but it is provided that the power of deduction shall not be so exercised as to prevent the payment of interest regularly paid during the test period. Payments for the support of the corporate organization, contributions to sinking funds, taxes and necessary rentals for subsidiary properties. The request for the protection of regularly paid dividends was denied, but it is declared that it will be the policy not to so use the power of deduction as to interrupt unnecessarily the regular payment of dividends.

Director General McAdoo outlined the scope of the contract in the following statement:

Director General McAdoo's Statement

I am announcing today the form of contract which the government is willing to make with the railroad companies covering federal control of the railroads and the compensation therefor.

The formulation of these contract provisions has been in progress since the approval of the Federal Control Act on March 21, last. The length of time consumed in this work has been due to the difficulties and intricacies of the subject, the absence of precedent for a contract of this nature, the great variety of railroad conditions and practices which had to be carefully considered and discussed before finally adopting a uniform plan, and the necessity of giving to the great number and variety of inter-

ests affected the fullest opportunity for hearing and discussion upon every aspect of the many-sided problems.

In order that no phase of the public interest might be unrepresented, I arranged at the outset for, and have continuously had, the benefit of the advice and assistance in this matter, of a committee of the Interstate Commerce Commission, consisting of Messrs. Clark, Hall, Anderson and Meyer.

The railroad companies and the railroad security holders have been represented by committees as well as by counsel. In addition to the various formal hearings and discussions, there have been repeated interviews at which a great many special problems affecting particular railroad companies have been fully represented.

The draft of contract adopted is the outcome of all these hearings, discussions and considerations and represents in my judgment a form of contract which conforms to the law, protects the public interest, and accords to railroad companies and their stockholders and bondholders the just protection which was contemplated by the government when it took possession and control of the railroads.

Aside from recitals, definitions, and description of property, the draft of contract covers only twelve pages. The principal features are as follows:

The railroad company accepts the contract and the compensation therein provided for in full satisfaction of all claims on account of federal possession and control.

Provision is made for the numerous features of operation and accounting during federal control, for the allocation of revenues on traffic in transit at midnight, December 31, 1917, for the handling of "over-lapping" items of expense, etc.

Provision is made for the maintenance of the property during federal control, of course at the expense of the government, on substantially the same basis as during the three-year test period ending June 30, 1917, and for the return of the property at the end of federal control in substantially as good repair and substantially as complete in equipment as on January 1, 1918; it is provided in effect that if during the test period the maintenance expenses were not sufficient to put the property in condition for safe operation, the additional maintenance necessary for safe operation may be provided at the expense of the company with the limitation that the cost of maintenance shall not be increased at the expense of the company over the normal standard of maintenance of railroads of like character and business during the test period.

Provision is made for the payment of taxes in accordance with the Federal Control Act.

Provision is made for the annual compensation (which will be fixed in each case in accordance with the provisions of the Federal Control Act) to be paid to the company in quarterly installments. This compensation will not be subject to any deductions which would prevent the company from supporting its corporate organization, keeping up its sinking funds, paying taxes and rents, and interest heretofore regularly paid, and interest on loans issued during federal control. These requirements of the company for corporate expenses and fixed charges being thus provided for, the government has the right to make deductions from the remaining compensation to satisfy indebtedness which the railroad company may owe to the government; however, the contract declares the power of deduction to be an emergency power, to be used only when no other reasonable means is provided by the company to reimburse the United States, and not to be used so as to interrupt unnecessarily the regular payment of dividends made by the company during the test period.

Provision is made for the orderly presentation and disposition of claims on the part of the railroad company for amounts expended by the Railroad Administration for additions to its property which, in the opinion of the railroad company, are not for its advantage and for which it believes it should not be charged.

Provisions are also made for final accounting at the end of federal control.

In a comparatively few instances, considering the opportunity for differences of opinion, there appear to remain some objections, on the part of some of the interests which have been heard, but these objections are, in my opinion, without foundation.

One of these objections is that the contract ought to leave open for litigation at the end of federal control the question whether the railroad has been damaged by diversion of its business during federal control. This claim is not tenable because the railroads

have been taken over for war purposes which necessitate diversion of traffic, hence there can be no escape from the view that Congress intended the compensation which it authorized to cover this element. This demand of certain interests is, in effect, for an opportunity to litigate and is a demand which need not be urged if the railroad company, instead of making the contract offered, should, instead, go to the Court of Claims to get its compensation. In this event the railroad company would get only a single compensation, covering its entire claim, including any damages for alleged diversion, and would not be allowed to litigate at the end of federal control the question of diversion of business. The contract ought not, in this respect, to put the railroad company in any better position than it would occupy if it made no contract. This demand is not only unreasonable but the director general has no lawful authority to grant it as I have been advised by the solicitor general of the United States to whom I submitted the question and who has considered and approved the legal aspects of the contract.

Objection has also been made that the contract ought not to require a railroad company to pay out of its compensation such additional amount as may be necessary to bring a railroad, which at the beginning of federal control was in unsafe condition, up to a condition of safe operation. This objection really means that the government ought to accept and continue such a property in an unsafe condition (which would be clearly contrary to the public interest and ultimately contrary to the interest of the owners of the property), or should itself repair at its own cost the fault of the owners and put the property in a better condition than the owners kept it, thus giving the owners not only compensation, but besides, at the end of federal control the advantage of having, without cost, an improved property, while this advantage would be denied to railroad owners who had properly maintained their property. I have not been able to accede to this view. I have felt that railroad owners had no right to make any such demand, nor do I believe that railroad owners generally do make any such demand. Under the contract, however, this right to bring the property up to a condition of safe operation is not to be exercised so as to interfere with the railroad company's payment of its fixed charges, including interest heretofore regularly paid.

Some objection has also been made that no part of a railroad company's compensation should be used to pay its debts to the government except such part as might remain after the company's payment of its customary dividends. This objection has no bearing where a company has paid dividends on a provident basis and has retained, as it is recognized all well regulated companies should retain, a substantial surplus of its income to provide a margin of credit and cover unproductive improvements. In every case the company can, in accordance with the contract, make other reasonable provision for reimbursing the United States and there need be no interference with its dividends as regularly paid during the test period. The objection only applies where a railroad company has paid improvident dividends. As to such a case the argument is that the contract should put the company in a far better position than it would occupy if it made no contract, and in a far better position than it would occupy if it continued in private control and enjoyed an income equal to the compensation guaranteed by the government. Without a contract, the right of deduction in such cases would be clear. Under private management, and with a corresponding income, the company would have to pay the penalty of improvident dividends through the loss of its credit and, ultimately, the breaking down of its property. The proposition is baldly that the government shall protect the company in paying improvident dividends, and then lend it money to cover all its indebtedness arising since federal control, and render it immune from the consequences of its own improvidence. All of these objections are unreasonable. It is not possible to believe that they express the views of the railroad companies generally, or the owners of railroad securities generally. The points are mentioned, however, because they appear to have been made the subject of very considerable publicity.

Frequently the arguments urged in opposition to certain features of the proposed contract have suggested the idea that under any such contract the railroads would be in a much worse position than if they had remained in private management. It may be well, therefore, to look at the situation which confronted the railroads last December and to consider what would probably be their present status if still in private management.

Last December the expenses of the railroads were increasing with great rapidity. They were hedged about in their efforts to obtain increased rates by the numerous and various restrictions imposed by the states, and also by the limitations imposed by the Interstate Commerce Act. They were confronted by imperative demands for greatly increased wages and were without machinery to insure an amicable settlement of those demands. They were finding it almost impossible to borrow money on any terms to make the improvements which were indispensable to enable them to perform their public service. The operating

results for the first four months of 1918 indicate that if the railroads had been under private control during that period they would have lost in operating income, as compared with the corresponding period of the preceding year, \$136,116,533; and, as compared with an average of the corresponding period for the three-year test period, \$96,064,356. This takes no account of the wage increase subsequently made, which nevertheless was retroactive to January 1.

*Under federal control the railroads have been able to contract with the government for a guaranteed income on a just basis, which relieves them of the formidable anxieties which confronted them in December and which would still be confronting them under private control. They are able to borrow money from the government on reasonable terms for necessary improvements, and these are fundamental things which impress the great body of railroad investors and should make them satisfied with the status as it now exists.

In another statement Mr. McAdoo explained his decisions on the points raised by the objections of the railway counsel and the Security Owners' Association as follows:

Concerning Objections Which Have Been Raised

A number of questions involved in the negotiations for a standard form of contract have been submitted for my personal decision by counsel representing the railroads, and also counsel for the National Association of Owners of Railroad Securities. I have given careful consideration to the oral and printed arguments made in support of these contentions.

(1) It is insisted that Section 1 of the contract should be amended so as to give an appeal from the Interstate Commerce Commission to the Court of Claims as to all of the matters which by the terms of the contract are referred to the Commission for decision. There are a number of matters purely administrative as to which an appeal ought not to be considered, and as to which the contention of counsel cannot be sustained.

It is provided in the Federal Control Act (Section 6) that any loss claimed by reason of additions, betterments, or road extensions, or constructed pursuant to said section, may be determined by agreement between the President and such carrier failing such agreement, the amount of such loss shall be ascertained as provided in section three hereof.

As to all such matters, the contention of counsel is sustained, and provision will be made in the contract providing for an appeal to the Court of Claims. As to the other matters in the contract referred to the Interstate Commerce Commission for decision, the contention is disallowed.

(2) The contract as drawn, provided that each carrier should turn over to the director general a working capital which had been tentatively agreed upon as representing the expenses of the carrier for one month without interest. It was insisted that this provision should be stricken out; and that no working capital as such should be insisted upon, and that such balances as came over to the Railroad Administration from any carrier should bear interest at the average rate received by the company during the year 1917, or its daily cash balances in bank.

There is great force in the contention that the carriers should provide a working capital; but I have decided to waive this, and sustain the contention of counsel, and the contract has been directed changed accordingly.

(3) *The Acceptance Clause:* Counsel have insisted, especially the counsel representing the Association of Security Holders, that the Acceptance Clause of the contract whereby it required that all loss and damage to the business or traffic by reason of the diversion thereof or otherwise which has been or may be caused by the taking over or the possession, use, control, or operation of the carriers, was unjust to the carriers, and should be stricken out; that the carriers should have the right, now or at the end of federal control:

(a) To sue for the loss of good-will, loss of business, diversion of traffic, or loss of corporate organization; or,

(b) That, if the road should not be returned to the carriers as now contemplated by the Federal Control Act, the effect of the Acceptance Clause as now written, would be to deprive the carriers of the right to claim damages by reason of said items.

This presents the question as to whether the compensation provided to be paid by the Federal Control Act is intended to be inclusive and exclusive. By the terms of the Act of 1916, the President was authorized to take over the railroads for war purposes, to use the same as a unified system of transportation, to divert traffic, and to make such use of the railroads as the war situation required.

*This paragraph reads slightly different from Mr. McAdoo's statement; a sheet of copy was mislaid, and it became necessary to secure the sense of the paragraph from other sources.—(Editor.)

The Federal Control Act not only contemplates the same use, but definitely contemplates a unified control and use of the railroads as one great system of transportation. There can, in my judgment, be no doubt but that the methods provided in said Act for compensation; that is, by agreement if an agreement can be made, if not by the decision of the Court of Claims—was intended to embrace all of the damage which the owners have a right to claim. This was the view of the General Counsel of the Railroad Administration and of all of my advisers; but the question was pressed upon me so strenuously that it seemed wise to refer it to the attorney general for an opinion, and an opinion was received, written by the solicitor general as follows:

"The contention made by counsel for the security holders as to Paragraph (a), Section 3 should be rejected. They are not entitled to have the contract so framed as to leave them after the acceptance of the agreed compensation with a right of action for further damages based upon the loss of good-will and the diversion or diversion of traffic.

"Unquestionably the just compensation which the statute provides, is intended to cover these as well as all other elements of loss and damage."

The contention, therefore, must be rejected.

(4) It was also contended that the director general should pay to the carriers a sufficient sum from operating expenses during federal control to pay the corporate expenses of the carriers. I gave careful consideration to this subject some months ago and reached the conclusion to which I still adhere that this contention is unsound and must be rejected.

(5) It was insisted that paragraph (b) of Section 5 should be stricken out. This provides that the director general may expend and charge to the carriers a sufficient sum to make such deferred maintenance as may be necessary to make the operation of the carrier safe, assuming a use of the road similar to the use during the test period, and not substantially enhancing the cost of maintenance over the normal standard of maintenance of railroads of like character and business during said period.

It does not seem to me open to dispute that the power to make deferred maintenance, is a necessary power, and is one which the statute contemplates may be exercised; and the contention should, therefore, be rejected.

(6) It was contended that Section 7, providing for compensation, should be so amended that the power to deduct from the amount of compensation provided in the contract to be paid the carrier, should not be exercised for deferred maintenance, additions, and betterments, or road extensions.

I have given very careful consideration to the arguments and have decided to provide in the contract that the power of deduction will not be exercised so as to prevent the payment of interest where interest was regularly paid during the three-year period, or to provide sum sufficient to support the corporate organization, to keep up the sinking funds of the carriers required by contracts in force December 31, 1917, to pay taxes and other sums necessary for the payment of rents for leased, operated, or controlled roads; nor shall such deduction be made in respect of additions and betterments which are for war purposes and not for the normal development of the company; nor in respect of road extensions.

This substantially grants the contention of the carriers and the security holders except to the extent that they request that such power of deduction be not insisted upon when its exercise would interfere with the payment of dividends regularly paid during the three-year period. I must deny this portion of the request because if I should accede to it the result would be that railroad companies would be permitted to pay improvident dividends when the funds so used ought to be employed in taking care of deferred maintenance and in payment of their just debts to the government. This ruling need not operate to embarrass any company which has paid dividends on a provident basis and has retained and does retain, as it is recognized all well regulated companies should retain, a substantial surplus of its income to provide a margin of credit and cover unproductive improvements. In every such case the company will be in position to provide for deferred maintenance if any, and to make reasonable provision for reimbursing the government, and there need be no interference with the company's dividends as regularly paid during the test period.

(7) It was also insisted that in determining the amount to be added to the compensation of the carriers upon the cost of any additions and betterments less retirements provided for by Section 4 of the Federal Control Act, the rate of interest to be allowed should be at least sufficient to offset the cost to the carrier of money borrowed where the moneys advanced by the company had to be secured from outside loans.

It has seemed to me that this contention should be granted to the extent of providing that the rate of interest to be allowed where the money was advanced by the director general should be the same rate which the director general charged the carrier for the money loaned. The contract may be charged accordingly.

Other matters of less moment were discussed. These have been passed upon and the contract as now drafted reflects my final view as to these several matters.

The Final Contract

SECTION 1.—PRIVITY, ALTERATIONS, DEFINITIONS, ETC.

(a) This agreement shall be binding upon the United States, the director general and his successors, and upon the company, its successors, and assigns.

This agreement shall not be construed as creating any right, claim, privilege, or benefit against either party hereto in favor of any state or any subdivision thereof, or of any individual or corporation other than the parties hereto.

(b) The provisions of this agreement may be altered, amended, or added to by and only by mutual consent signified by instruments in writing signed by the director general and by some officer of the company thereto duly authorized by the board of directors of the company.

(c) Wherever in this agreement the word "Commission" is used it shall be understood as meaning the Interstate Commerce Commission, acting by divisions or otherwise as authorized by law; but either party shall have the right to have the decision of any division of the Commission reviewed by the Commission sitting as a whole.

(d) Wherever in this agreement the words "Federal control" are used to indicate a period of time, they shall be understood as meaning the period from 12 o'clock midnight of December 31, 1917, to and including the day and hour on which said control shall cease.

(e) Wherever in this agreement the words "test period" are used, they shall be understood as meaning the period between July 1, 1914, and June 30, 1917, both inclusive.

(f) Wherever in this agreement the words "standard return" are used, they shall be understood as meaning the average annual railway operating income of the company, computed in the manner provided in section 1 of the federal control act, and ascertained and certified by the Commission.

(g) Wherever in this agreement the words "Director General" are used, they shall be understood as designating William G. McAdoo, or such other person as the President may from time to time appoint to exercise the powers conferred on him by law with relation to federal control, or such agents or agencies as the director general may from time to time appoint for the purpose; and wherever by this agreement any notice is to be given by the director general, the same may be given in his name by any subordinate thereto duly authorized.

(h) Wherever the property of the company is referred to in this agreement it shall be understood as including all the property described in paragraph (a) of section 2 hereof, whether owned or leased by the company, and, where the context permits, all additions or betterments thereto or extensions thereof made during federal control; and as to all such leased property the company shall have the benefit of and be subject to all the obligations and provisions of this agreement and shall be subject to all duties imposed by law in respect of such leased property.

(i) The descriptive words at the heads of the several sections of this agreement and the table of contents are inserted for convenience merely, and are not to be used in the construction of the agreement.

SECTION 2.—PROPERTY TAKEN OVER

The company's railroad and system of transportation of which the President has taken over possession, use, control, and operation shall be considered as including:

(a) The following roads and properties: (*Here insert list of roads, noting names, principal termini, etc.*) together with all branches, tracks, trackage, bridge, and terminal rights, and lines of railroad owned or leased and operated by the company as a part of its system of transportation, and all other property, with the appurtenances thereof, whether included in the foregoing list or not, the revenues of which were used, or which, if the property had been then revenue bearing, would have been used, in computing the company's standard return. . . .

The company reserves to itself the benefit of all leases (and of all rents and revenues accruing therefrom), of parts of its right of way, station grounds, and other property, the revenues from which under the accounting rules of the Commission in force during the test period were properly creditable to "miscellaneous rent income" or "miscellaneous income." The company grants to the director general all its rights to terminate leases of any part of its right of way, yards, or station grounds, and to occupy and use the premises of any such lessee when, in his judgment, the same is required for operating purposes. The company shall have for its own benefit the right to lease for industrial sites or other purposes such portion of its right of way, yards, or station grounds, or structures thereon, as are not required by the director general for operating purposes.

and to receive and enjoy the rentals therefrom, subject to the right of the director general to cancel any such lease and to occupy the premises or structures whenever, in his judgment, the same are necessary for operating purposes. All expenses connected with any such property heretofore or hereafter leased or otherwise occupied, as in this paragraph provided, including taxes thereon which during the test period were not charged to railway tax accruals, shall be paid by the company while receiving the revenues therefrom.

[This paragraph may have to be modified, in particular cases, to fit the situation created by the existence of mixed operating and nonoperating property, and perhaps in other cases.]

(b) All materials and supplies on hand at midnight December 31, 1917. *[This item to be supported by an inventory, which, however, is not to be incorporated in the contract except by reference.]*

(c) All balances in the account or accounts representing the total of "Net balance receivable from agents and conductors" as of midnight December 31, 1917;

(d) *[Here insert list of such other operating assets and of any deposits or funds as may be agreed on in each case. If no such assets, deposits, or funds are taken over, omit this paragraph and correct §§ 4 (a), 4 (e), and 9 (d) accordingly.]*

SECTION 3.—ACCEPTANCE

(a) The company accepts all the terms and conditions of the federal control act and any regulation or order made by or through the President under authority of said act or of that portion of the act approved August 29, 1916, referred to in paragraph (a) of the preamble to this agreement which authorizes the President in time of war to take possession, assume control, and utilize systems of transportation; and the company further and expressly accepts the covenants and obligations of the director general in this agreement set out and the rights arising thereunder in full adjustment, settlement, satisfaction, and discharge of any and all claims and rights, at law or in equity, which it now has or hereafter can have, otherwise than under this agreement, against the United States, the President, the director general, or any agent or agency thereof, for compensation under the Constitution and laws of the United States for the taking possession of its property, and for the use, control, and operation thereof during federal control, and for any and all loss and damage to its business or traffic by reason of the diversion thereof or otherwise which has been or may be caused by said taking or by said possession, use, control, and operation.

No claim is made by the company for compensation for the period between noon of December 28 and midnight of December 31, 1917; and the revenues of said period shall belong to the company, and the expenses thereof shall be paid by the company, allocated in both cases as provided in paragraph (b) of section 4 hereof.

(b) The company, on its own initiative or upon the request of the director general, shall take all appropriate and necessary corporate action to carry out the obligations assumed by it in this agreement or lawfully imposed upon it by or pursuant to the proclamation of December 26, 1917, or by the Federal control act.

(c) The federal control act being in section 16 thereof expressly declared to be emergency legislation enacted to meet conditions growing out of war, nothing in this agreement shall be construed as expressing or prejudicing the future policy of the federal government concerning the ownership, control, or regulation of the company, or the method or basis of the capitalization thereof, and the recitals or provisions of this agreement shall not be used, as evidence or otherwise, by either party hereto in any pending or future proceeding which involves the acquisition or valuation of the company's property or any part thereof; but nothing in this paragraph shall be taken or construed as affecting the settlement and discharge contained in paragraph (a) of this section, nor as limiting or qualifying any of the provisions of said paragraph for the purposes thereof.

SECTION 4.—OPERATION AND ACCOUNTING DURING FEDERAL CONTROL

(a) All amounts received by the director general under paragraphs (c) and (d) of section 2 hereof and all other amounts whether received from the company in cash or collected or realized upon by him from current operating assets belonging to the company or arising from railway operations prior to midnight of December 31, 1917, shall be credited by him to the company; and the director general shall, to the extent of the cash so received or realized, pay and charge to the company all expenses arising out of railway operations prior to January 1, 1918, including reparation claims, and, unless objected to by the company, may pay and charge to the company any of such expenses, including reparation claims, in excess of the cash so received or

realized. Balances of the above accounts shall be struck quarterly on the last days of March, June, September, and December of each year, and the cash balance found on such adjustments to be due either party shall be then payable and, if not paid, shall bear interest at the rate of 6 per cent per annum, unless the parties shall agree upon a different rate; except that the rate of interest on any portion of a balance found due to the company which is derived from cash in bank to the credit of such company on interest, shall be adjusted in each case independently of this contract as the parties may agree.

(b) Railway operating expenses, reparation and other claims, hire of equipment and joint facility rents shall be allocated with reference to the time when incurred as between the period prior and subsequent to midnight of December 31, 1917, and as between the period of federal control and the period subsequent thereto. Railway operating revenues shall be allocated as between the period prior and subsequent to midnight of December 31, 1917, in accordance with the established accrual practices of the company; except that where prior to midnight of December 31, 1917, the company's part of a service on through business had been completed or carload lots on its own line had reached destination, the revenue of the company for such service shall be allocated to it; but as to classes of traffic where in the opinion of the director general such allocation will involve undue delay or undue absorption of accounting labor, such revenues shall be allocated in accordance with the established accrual practices of the company. Like methods of accruing and allocating such revenues shall be made at the end of federal control.

(c) All expenditures made by the director general during federal control for additions and betterments, exclusive of equipment, or for extensions begun prior to January 1, 1918, shall be charged to the company, and if the completion of any such addition, betterment, or extension is approved or ordered by the director general, the company shall be entitled under the provisions of paragraph (d) of section 7 hereof to interest on the cost thereof from the completion of the work; but no interest (except to the extent that the same may be allowed and included in the compensation provided for in paragraph (a) of section 7 hereof) shall be due the company upon any such expenditures for work done prior to January 1, 1918. Payments for all equipment ordered or under construction by the company prior to January 1, 1918, but delivered on or after that date, shall also be considered as expenditures made by order or approval of the director general under paragraph (d) of section 7 hereof. Interest during construction payable under this paragraph, and also interest during construction on the cost of any additions, betterments, and road extensions made by the company or at its expense to the company's property during federal control, shall be included in the cost of the work.

(d) Cash receipts or disbursements and other items arising out of transactions which do not enter into or form a part of those used in determining the company's standard return shall not be received or paid by the director general unless such transactions are negotiated or conducted by his order for account of the company and with its consent. When moneys are so received or paid by the director general in connection with such corporate transactions they shall be credited or charged to the company. There shall be an accounting of the amounts due by one party or the other under this paragraph at the end of each quarter year of federal control, and the amount so found due shall be then payable and if not paid shall bear interest as provided in paragraph (a) of this section.

(e) Any funds taken over as provided in paragraph (d) of section 2 hereof shall be maintained by payments and charges to appropriate operating expense accounts and used by the director general during federal control substantially in the same manner as prior to January 1, 1918. All sums paid by the director general to maintain pension funds or pension obligations or practices, and all contributions to Young Men's Christian Associations of employees, employees' savings funds, relief funds or associations, reading rooms, or health, accident, or death benefits for employees shall be treated as a part of railway operating expenses during federal control.

(f) All salaries and expenditures incurred by the company during federal control for purposes which relate to the existence and maintenance of the corporation, or to the properties of the company not taken over by the President, or to negotiations, contracts, valuations, or any business controversy with the government or any branch thereof, and which are not specially authorized by the director general, shall be borne by the company; except that the expenses of

valuation now being made by the Commission to the extent that they are, in the opinion of the director general, necessary to comply with the valuation orders and other requirements of the Commission and to the co-operation of the company in the making of such valuation, shall be paid by the director general as a part of railway operating expenses. If the company is dissatisfied with the ruling of the director general it may appeal to the Commission, whose decision shall be final.

(g) The director general shall furnish for additions, betterments and road extensions to the company's property approved or ordered by him any of the materials and supplies taken over under paragraph (b) of section 2 hereof, or purchased by him and held for use in connection with the company's property, in so far as, in his judgment, he can do so with due regard to his own requirements. Materials and supplies so furnished shall be charged to the company at cost.

(h) The director general shall at his option be substituted for the period of federal control in the place of the company in respect of the benefits and obligations of contracts relating to operation in force January 1, 1918 (including contracts made by subsidiaries for the use and benefit of the company and the right to abrogate or change and make new contracts with express companies for the period of federal control), except as to contracts between the company and subsidiary companies which shall be considered and treated as arrangements or practices; and the director general shall in like manner at his option be substituted for such period in respect of the benefits and obligations of arrangements and practices in force during the test period in regard to fuel, materials, and supplies for the operation of the property described in paragraph (a) of section 2 hereof and of any additions, betterments, and road extensions thereto, obtained from any mine, oil field, or other source of supply owned or controlled by the company, it being understood that under such arrangements or practices, if availed of by the director general, he shall, to the extent necessary to offset any increase in the standard return growing out of the furnishing by the company or of its subsidiaries, during the test period, of fuel, materials, and supplies under an arrangement or practice at less than the then cost or the then market value thereof for railroad purposes, be charged for such fuel, materials, and supplies a price expressed in dollars or cents per unit below or above the then cost of the then market value thereof for railroad purposes (as the practice of the company may have been) in the same amount that the prices charged the company during the test period were below or above the then cost or the then market value thereof for railroad purposes; and at the request of the director general or the company the prices for fuel or materials supplied between December 31, 1917, and the execution of this contract shall be adjusted on the foregoing basis: *Provided, however,* That a source of supply which the company had acquired to safeguard its own operations shall not be depleted or reduced for use on other transportation systems, except in cases of emergency to be determined by the director general, in which event the quantity so used on other transportation systems shall be accounted for to the company at the fair value thereof: *And provided further,* That materials and supplies secured under contracts which the company had made for its own operations shall, so far as practicable, be used on the company's property, and that, if used on any other transportation system, materials and supplies of like character shall be furnished by the director general for use in making such additions, betterments, and road extensions as shall be chargeable to the company, and shall be charged at cost under such contracts.*

(i) The director general shall pay, or save the company harmless from, all expenses incident to or growing out of the possession, operation, and use of the property taken over during federal control, except the expenses which under this agreement are to be borne by the company. He shall also pay or save the company harmless from all rents called in the monthly reports to the Commission equipment rents or joint-facility rents, and all judgments or decrees that may be recovered or issued against, and all fines and penalties that may be imposed upon, the company by reason of any cause of action arising out of federal control, or of anything done or omitted in the possession, operation, use, or control of the company's property during federal control, except judgments or decrees founded on obligations of the company to the director general or the United States.

(j) The director general shall save the company harmless from any and all liability, loss, or expense resulting from

* In view of the differing situations of the various carriers, a uniform standard clause covering the subject matter of paragraph (h) will not be insisted upon, the same being left open for such separate treatment as may be agreed on in each case.

or incident to any claim made against the company growing out of anything done or omitted during federal control in connection with, or incident to, operation or existing contracts relating to operation; and shall do and perform, so far as is requisite under federal control for the protection of the company, all and singular the things, of which he may have notice, necessary and appropriate to prevent, because of federal control or of anything done or omitted thereunder, the forfeiture or loss by the company of any of its property rights, ordinance rights, or franchises, or of its trackage, lease, terminal, or other contracts involving a facility of operation; but nothing herein contained shall be construed to require the director general to make any capital expenditure necessary to preserve a franchise or ordinance right not heretofore availed of by the company. The director general shall also save the company harmless from any and all claims for breach of covenant heretofore entered into by the company or by any predecessor in title or interest in any mortgage or other instrument in respect to insurance against losses by fire.

Nothing in this or in the preceding paragraph shall be construed to be an assumption by the director general of, or to make him liable on, any obligation of the company to pay a debt secured by a mortgage or any rent under a lease, except rents which during the test period were called in the monthly reports to the Commission equipment rents and joint facility rents and rents which under the accounting rules of the Commission in force during the test period were classified as operating expenses.

(k) In carrying out the provisions of paragraphs (a), (b), (c), and (d) of this section and the provisions of section 6 hereof the director general shall not settle any claim by or against the company against the objection in writing of the president or of any other duly authorized officer of the company. The conduct of all litigation before any court or commission arising out of such disputed claims, or out of operation prior to federal control, shall be in charge of the director general's legal force and the expense thereof shall be paid by the director general; but the company may, at its own expense, employ special counsel in connection with any such litigation.

(l) Nothing in this agreement shall be construed as inconsistent with the provision in section 10 of the federal control act that no process, mesne or final, shall be levied against any property under federal control, nor as a waiver by the United States of any claim that might otherwise be made by it that the rights of any state or subdivision thereof or of any individual or corporation have been abrogated or suspended by the taking over of the company's property or by federal control.

(m) The company shall have the right at all reasonable times to inspect the books and accounts kept by the director general relating to the property of the company, or to the operation thereof, and the director general shall during federal control furnish the company with a copy of the operating reports relating to its property, and as soon as practicable after the end of each fiscal year shall furnish to the company a complete list of its equipment as of the end of such fiscal year.

SECTION 5.—UPKEEP.

(a) During the period of federal control the director general shall, annually, as nearly as practicable, expend and charge to railway operating expenses, either in payments for labor and materials or by payments into funds, such sums for the maintenance, repair, renewal, retirement, and depreciation of the property described in paragraph (a) of section 2 hereof as may be requisite in order that such property may be returned to the company at the end of federal control in substantially as good repair and in substantially as complete equipment as it was on January 1, 1918: *Provided, however,* That the annual expenditure and charges for such purposes during the period of federal control on such property and the fair distribution thereof over the same, or the payment into funds of an amount equal in the aggregate (subject to the adjustments provided in paragraph (c) and to the provisions of paragraph (e) of this section) to the average annual expenditure and charges for such purposes included under the accounting rules of the commission in railway operating expenses during the test period, less the cost of fire insurance included therein, shall be taken as a full compliance with the foregoing covenant.

(b) The director general may expend such sums, if any, in addition to those expended and charged under paragraph (a) of this section (subject to the adjustments provided in paragraph (c) of this section) as may be requisite for the safe operation of the property described in paragraph (a) of section 2 hereof, assuming a use similar to the use during the test period and not

substantially enhancing the cost of maintenance over the normal standard of maintenance of railroads of like character and business during said period; and the amount, if any, of such excess expenditures during federal control shall be made good by the company as provided in paragraph (b) of section 7 hereof.

(c) In comparing the amounts expended and charged under the provisions of paragraphs (a) and (b) of this section with the amounts expended and charged during the test period, due allowance shall be made for any difference that may exist between the cost of labor and materials and between the amount of property taken over and the average for the test period, and, as to paragraph (a), for any difference in use between that of the test period and during federal control which in the opinion of the Commission is substantial enough to be considered, so that the result shall be, as nearly as practicable, the same relative amount, character, and durability of physical reparation.

(d) At the request of either party there shall be an accounting of the amounts due by one party or the other under paragraphs (a) and (b) of this section at the end of each year of federal control and at the end of federal control.

(e) If during federal control any of the property described in paragraph (a) of section 2 hereof or any replacement thereof or addition thereto or betterment or extension thereof is destroyed or damaged otherwise than by fire or public enemies, and is not restored or replaced by the director general, he shall reimburse the company the value of the property destroyed or the amount of the damage at the time of the loss; and the cost of restoration or replacement, or said value or damage, as the case may be, shall be charged to annual railway operating expenses: *Provided, however,* That if the Commission, on application of either party and after giving due consideration to the practice of the company during the test period in respect to such matters and to any other pertinent facts and circumstances, determines that it is just and reasonable that the said cost or value shall be apportioned or extended over a period of more than one year, this shall be done, and so much of said cost or value as may be apportioned by the Commission over the period subsequent to federal control, shall be charged to the company in the final accounting at the end of federal control and shall be paid by it.

If, during federal control, any of the property described in paragraph (a) of section 2 hereof or any replacement thereof or addition thereto or betterment or extension thereof is destroyed or damaged by fire, and is not restored or replaced by the director general, he shall reimburse the company the value of the property destroyed or the amount of the damage at the time of the fire; and the cost of restoration or replacement or said value of damage, as the case may be, shall be charged to annual railway operating expenses, but the same shall not be considered a charge to such expenses for the purposes specified in paragraph (a) of this section.

In case of any such loss or damage by fire, the director general shall, if given written notice of the requirements of any mortgage, equipment lease, or trust on the property so destroyed or damaged, make such restoration or replacement, or pay such value or damage, in such way as to meet the requirements of such mortgage, equipment lease, or trust in the same manner as would have been proper in applying the proceeds of insurance on such property if it had been insured by the company against loss or damage by fire in accordance with the terms of such instruments of lien; and a compliance with the written request of the company in respect thereof shall be a full acquittance of any obligation of the director general in the premises.

The foregoing parts of this paragraph are subject to the proviso that in case of loss or damage any addition and betterments made in connection with or as a part of the restoration or replacement of property damaged or destroyed and chargeable under the accounting rules of the Commission in force December 31, 1917, to investment in road and equipment, shall be charged to and paid by the company.

The director general shall not be liable to the company for any loss or damage due to the acts of public enemies.

(f) If any additions, betterments, or road extensions are made to the property taken over or any equipment is added at the expense of the company and with the approval or by order of the director general during federal control, he shall expend and charge to railway operating expenses such sums either in payments for labor and materials or by payments into funds, as may be requisite for the proper maintenance, repair, renewal, retirement, and depreciation of such property until the end of federal control.

(g) The company shall have the right to inspect its property at all reasonable times during federal control, and the director general shall provide reasonable facilities for such inspection.

(h) If any question shall arise, either during or at the end of federal control, as to whether the covenants or provisions in this section contained are being or have been observed, the matter in dispute shall, on the application of either party, be

referred to the Commission which, after hearing, shall make such findings and order as justice and right may require, which shall be final as to the questions submitted and shall be binding on and observed by both parties hereto, except that either party may take any question of law to the courts, if it so desires.

SECTION 6.—TAXES

(a) All taxes assessed under federal or any other governmental authority for the period prior to January 1, 1918, including a proportionate part of any such tax assessed after December 31, 1917, for a period which includes any part of 1917 or preceding years, and unpaid on that date, all taxes commonly called war taxes which have been or may be assessed against the company under the act of Congress entitled "An act to provide revenue to defray war expenses and for other purposes," approved October 3, 1917, or under any act in addition thereto or in amendment thereof, and all taxes which have been or may be assessed on property under construction, and all assessments which have been or may be made for public improvements, chargeable under the accounting rules of the Commission in force December 31, 1917, to investment in road and equipment, shall be paid by the company; but upon the amount thus chargeable to investment interest shall be paid to the company during federal control at the rate provided in paragraph (a) of section 7 hereof. Taxes assessed during construction on additions, betterments, and road extensions made by the company with the approval or by order of the director general during federal control, shall be considered a part of the cost of such additions, betterments, and extensions and shall, under the provisions of paragraph (d) of section 7 hereof, bear interest as a part of such cost from the date of the completion of such additions, betterments, or extensions. Assessments for public improvements which do not become a part of the property taken over shall bear interest from the date of the payment of such assessment.

(b) If any tax or assessment which under this agreement is to be paid by the company is not paid by it when due, the same may be paid by the director general and deducted from the next installment of compensation due under section 7 hereof. If any taxes properly chargeable to the director general have been or shall be paid by the company, it shall be duly reimbursed therefor.

(c) The director general shall either pay out of revenues derived from railway operation during the period of federal control or shall save the company harmless from all taxes, and the expense of suits in respect thereof, lawfully assessed under federal or any other governmental authority for any part of said period on the property under such control, or on the right to operate as a carrier, or on the revenues derived from operation, and all other taxes which under the accounting rules of the Commission in force December 31, 1917, are properly chargeable to "railway tax accruals," except the taxes and assessments for which provision is made in paragraph (a) of this section.

(d) If any such tax is for a period which began before January 1, 1918, or continues beyond the period of federal control, such portion of such tax as may be apportionable to the period of federal control shall be paid by the director general, and the remainder shall be paid by the company.

(e) Whenever a period for which a tax is assessed can not be definitely determined, so much of such tax as is payable in any calendar year shall be treated as assessed for such year.

SECTION 7.—COMPENSATION

(a) The annual compensation guaranteed to the company under section 1 of the federal control act shall be the sum of dollars during each year and pro rata for each fractional part of a year of federal control, subject, however, to any increase or decrease in the standard return hereafter made by the commission as provided in paragraph (d) of the preamble of this agreement.

(b) The said compensation shall be paid to the company quarterly in equal installments on the last days of March, June, September, and December of each year for the quarter ending therewith, except that the first two installments shall be due as of March 31, 1918, and June 30, 1918, respectively, but shall be paid upon the execution of this agreement; but from each installment there may be deducted any amount then due by the company under paragraphs (a) and (d) of section 4 hereof, under paragraph (b) of section 5 hereof, and under paragraph (b) of section 6 hereof, and all amounts required to reimburse the United States for the cost of additions and betterments made to the property of the company not justly chargeable to the United States, unless such matters are financed or otherwise taken care of by the company to the satisfaction of the director general, and the director general may apportion any such amounts to two or more subsequent installments: *Provided, however,* That said power to deduct amounts due or accruing under paragraph (b) of section 5 hereof and the cost of additions and betterments not justly chargeable to the United States, shall not be so exercised as to prevent the company from paying out the

sums reasonably required to support its corporate organization, to keep up sinking funds for the company's debts required by contracts in force December 31, 1917, to pay its taxes, to pay rents and other amounts (not chargeable to capital account) properly payable by the company for leased or operated roads and properties, to pay interest which has heretofore been regularly paid by the company, and interest on loans issued during federal control and approved by the director general,* nor shall such deduction be made in respect of additions and betterments which are for war purposes and not for the normal development of the company, nor in respect of road extensions, nor in respect of amounts due under paragraphs (a) and (d) of section 4 hereof, in cases where the current assets, including materials and supplies, of the company taken over by the director general under the provisions of this agreement clearly exceed the current liabilities of the company paid or assumed by the director general under said section. In the event of a difference as to the fact whether additions and betterments are for war purposes and not for the normal development of the company, or as to whether an addition is a road extension, the question may, on application of either party, be referred to and determined by the Commission.

The power provided in this paragraph to deduct the amount due by the company for the cost of additions and betterments not justly chargeable to the United States is further declared to be an emergency power, to be used by the director general only when he finds that no other reasonable means is provided by the company to reimburse the United States, and, as contemplated by the President's proclamation and by the federal control act, it will be the policy of the director general to so use such power of deduction as not to interrupt unnecessarily the regular payment of dividends as made by the company during the test period.

Overdue installments of compensation, or balances thereof, provided for in this section shall bear interest from maturity at the rate of five per cent per annum, except that if the director general shall, prior to the execution of this contract, have loaned the company any money, the installments of compensation overdue at the date of the execution hereof shall bear interest from maturity at the same rate as that charged to the company on such loans.

(c) During federal control the company shall not, without the prior approval of the director general, issue any bonds, notes, equipment trust certificates, stock, or other securities, or enter into any contracts (except contracts in respect of corporate affairs and property not taken under federal control), or agree to pay interest on its debt at a higher rate, or for rent of leased roads and properties a larger amount, than the rates and amounts payable as of, or required by contracts in force on, December 31, 1917. The company may, however, procure the authentication and delivery to it under any mortgage or trust deed or agreement in force December 31, 1917, of bonds or notes issuable thereunder in respect of additions, betterments, extensions, and equipment, or for refunding purposes.

(d) Upon the cost of additions and betterments (including equipment), less retirements in connection therewith and upon the cost of road extensions, made to the property of the company during federal control, the director general shall, from the completion of the work, pay the company a reasonable rate of interest, to be fixed by him on each occasion. In fixing such rate or rates he may take into account not merely the value of money but all pertinent facts and circumstances, whether the money used was derived from loans or otherwise, provided that to the extent that the money is advanced by the director general or is obtained by the company from loans or from the proceeds of securities the rate or rates shall be the same as that charged by the director general for loans to the company or to other companies of similar credit.

(e) From its compensation so received by it or from other income, if adequate for the purpose, the company shall make all payments of interest, rents and other sums necessary to prevent a default under any mortgage or lease of any of the property described in paragraph (a) of section 2 hereof; and if at any time during federal control the company, by virtue of any change in the right of possession (subject to the rights of the United States) to any of said property or otherwise, shall no longer be entitled as between itself and any other person or corporation to receive the entire compensation herein provided, such compensation shall be apportioned and paid, as between the parties entitled thereto, as justice and right may require.

SECTION 8.—CLAIMS FOR LOSSES ON ADDITIONS, ETC.

(a) Prompt notice in writing, except as provided in paragraph (d) of this section, shall be given the company of the making or ordering of any additions, betterments, or road ex-

tensions, including terminals, motive power, cars, or other equipment to or for the property of the company costing more than one thousand dollars, with an estimate of the cost thereof. Such notice shall be given before the beginning of the work or the acquisition of the property whenever in the judgment of the director general it is practicable to do so. Within a reasonable time after the completion of the work or the acquisition of the property, a written statement of the final cost thereof shall be given the company. There shall be furnished the company, as soon as practicable after the end of each month, a written statement of all expenditures estimated to cost one thousand dollars or less chargeable to investment in road and equipment made during the month, with a brief description of the work done or of the property acquired; and such statement shall constitute all the notice of additions and betterments costing one thousand dollars or less required by (b) and (c) of this section. The notices provided in this paragraph may be given to the president of the company unless the company designates some other officer to receive the same, in which event the notice shall be given to such other officer.

(b) Any claim of the company for loss accruing to it by reason of expenditures for additions and betterments made to the property of the company during federal control in connection with or as part of the work of maintaining, repairing, and renewing the company's property and chargeable under the accounting rules of the Commission in force December 31, 1917, to investment in road and equipment, except such expenditures as are incurred in connection with the replacement of buildings and structures in new locations, may be determined by agreement between the director general and the company, or, failing such agreement as to the fact or amount of such loss, the questions at issue may, upon the application of either party at any time after the filing of the statement of claim hereinafter referred to, be ascertained in the manner provided in section 3 of the federal control act: *Provided, however,* That no loss shall be claimed by the company and no money shall be due to it in respect of such additions and betterments upon the ground that the actual cost thereof at the time of construction was greater than under other market and commercial conditions; and for the purpose of determining such controversy the amount paid for any addition or betterment shall be deemed the fair and reasonable cost thereof and shall be taken as the basis for such determination; nor unless the company, within sixty days of notice to it that the work will be done, shall give the director general notice of objection thereto and shall file with the director general a statement of its claim within ninety days after notice of the completion of the work.

(c) Any claim of the company for loss accruing to it by reason of any additions and betterments which are not made in connection with or as a part of the work of maintaining, repairing, and renewing the company's property, or accruing to it in connection with maintenance in the replacement of buildings and structures in new locations, or by reason of road extensions, terminals, motive power, cars, or other equipment made to or provided for the property of the company during federal control, may be determined by agreement between the director general and the company, or failing such agreement as to the fact or amount of such loss, may, by proceedings instituted not later than six months after the end of federal control, be ascertained in the manner provided in section 3 of the federal control act: *Provided, however,* That no loss shall be claimed by the company and no money shall be due to it in respect of such additions, betterments, road extensions, terminals, motive power, cars, or other equipment mentioned in this paragraph upon the ground that the actual cost thereof at the time of construction or acquisition was greater than under other market and commercial conditions; and for the purpose of determining such controversy the amount paid for any additions, betterments, road extensions, terminals, motive power, cars, or other equipment shall be deemed the fair and reasonable cost thereof and shall be taken as the basis for such determination; nor unless within sixty days after notice to the company of such construction or acquisition written notice is given to the director general by the company that it will claim a loss in respect thereof. With and as part of such notice the company shall state its objections to such construction or acquisition as far as reasonably practicable at the time. Nothing in this agreement shall be construed as barring the United States from contending that no loss within the meaning of the federal control act accrued to the company by reason of any additions, betterments, or road extensions made during federal control by order or approval of the director general, if it is made to appear that the company itself but for federal control should in the exercise of sound judgment have made such addition, betterment or road extension.

(d) Where additions, betterments, or road extensions or terminals, motive power, cars, or other equipment have been made to or provided for the property of the company during

* The company will be expected to furnish the director general, prior to the execution of any contract, with a sworn statement of all the fixed charges, rents, and other items mentioned in this clause, as of December 31, 1917.

federal control but prior to the execution of this agreement, the director general shall not be required to give the notice thereof provided for in paragraph (a) of this section and notice by the company of any claim of loss in respect thereto may be given the director general within ninety days after the execution hereof; and such claims shall thereafter be proceeded with in the manner provided in paragraph (b) or paragraph (c) of this section, as the case may be.

(e) The director general shall reimburse the company for the amount of loss ascertained under this section with a proper adjustment of interest thereon.

(f) The director general shall not acquire any motive power, cars, or other equipment at the expense, or on the credit, of the company in excess of what in his judgment is necessary, in addition to its then existing equipment, to provide for the traffic requirements of its own system of transportation; but this provision shall not prevent the director general, after the acquisition of such equipment, from using the same, or any part thereof, on the line of any other transportation system operated by him.

SECTION 9.—FINAL ACCOUNTING

(a) At the end of federal control all the property described in paragraph (a) of section 2 hereof shall be returned to the company, together with all repairs, renewals, additions, betterments, replacements, and road extensions thereto which have been made during federal control, except as any part thereof may have been destroyed or retired and not replaced, in which case the provisions of section 5 hereof shall govern and except that the director general shall not be obliged to restore or replace property destroyed or damaged by the acts of public enemies.

(b) At the end of federal control the director general shall return to the company all uncollected accounts received by him from the company and also materials and supplies equal in quantity, quality, and relative usefulness to that of the materials and supplies which he received, and to the extent that the director general does not return such materials and supplies he shall account for the same at prices prevailing at the end of federal control. To the extent that the company receives materials and supplies in excess of those delivered by it to the director general it shall account for the same at the prices prevailing at the end of federal control, and the balance shall be adjusted in cash.

(c) The total amount of the account "Net balance receivable from agents and conductors" at the end of federal control may be turned over by the director general to the company. He may also turn over all assets which have accrued out of operation; and the company shall, to the extent of the cash received or realized from such assets, pay and charge to the director general all expenses arising out of railway operations during federal control, including reparation and other claims, and may, unless objection is made by the director general, pay and charge to him any such expenses including reparation and other claims in excess of the cash so received or realized. On the first day of the third month following the termination of federal control an accounting between the parties shall be had, and so on the first of each third month thereafter. Any balance found due either party shall be payable as of the date on which the account is stated and shall bear interest until paid.

(d) At the end of federal control there shall be paid to the company any balance then remaining unpaid of the cash and special deposits received from the company at the beginning of federal control, together with any unpaid interest which may have accrued upon the same. There shall also be paid to the company all special funds which were taken over by the director general as enumerated in section 2 hereof, and any funds created under the provisions of this agreement, except to the extent that such funds may have been properly used under this agreement.

(e) Wherever under any provision of this section there is to be an adjustment of interest, it shall be at the rate of five per cent per annum unless the parties shall in any case agree on a different rate.

(f) After federal control no claim by or against the director general shall be settled by the company against the written objection of the director general or the attorney general of the United States. The conduct of all litigation before any court or commission arising out of such disputed claims or out of operations during federal control shall be in charge of the company's legal force and the expense thereof shall be paid by the company; but the director general or the attorney general may, at the expense of the United States, employ special counsel in connection with any such litigation.

The Railroad Administration has also tendered to representatives of the short line railroads a special form of contract to meet their peculiar conditions which has been the subject

of negotiations for several weeks. It was thought this might be declared acceptable to the short lines before the end of the week.

Orders of Regional Directors

MAINTENANCE OF ENGINE TERMINALS.—The Eastern regional director orders that to insure proper condition of engine terminals for the Winter, repairs be made to roundhouse, roofs, windows, doors, heating pipes, lighting systems, etc., November 1. Shelter should be provided for those employees whose occupations expose them to the weather, such as ashpit, turntable and coaling forces, in order to protect the men, and by making comfortable provision help insure retention of sufficient force. Machinery of coaling plants, turntables, etc., should be inspected and repaired and spare parts provided to insure uninterrupted service.

Headlight Requirements on Switching Locomotives.—The Eastern regional director states that it has been determined that when necessary to make changes in headlights on switching locomotives to meet the requirements of the law, or on account of renewals, they will be equipped with headlights of the incandescent type with a turbo-generator and a bulb of suitable wattage.

Utilization of U. S. Employment Service.—The Eastern regional director advises that while it is desired to utilize to the fullest extent the United States Employment Service in the providing of railway labor, no understanding or commitments have been made by the Railroad Administration to the effect that the Employment Service is charged with the duty and responsibility of protecting the railroad requirements. It must be clearly understood by those in charge of the operation and maintenance of railroad facilities that the responsibility for an adequate and proper force devolves upon them and that they are expected to utilize all of the sources available for the procurement of their labor.

Courtesy First.—The regional directors are adding to the director general's appeal for courtesy and consideration for the public on the part of railway employees. The regional director for the Southwestern district has supplemented the director general's appeal with a suggestion for holding meetings and getting right at the root of the matter. That part of his circular reads: "I suggest that each federal manager have a meeting of his department officers as promptly as possible, and go fully into this subject. In turn, the various department heads, particularly traffic, should have similar meetings with their subordinates."

Purchase of Rolling Equipment.—The Northwestern regional purchasing committee has furnished instructions to purchasing agents on the purchase of rolling equipment, such as locomotives, cars, coaches, etc. When an aggregate purchase for equipment, the capital expenditure for which has been duly approved, is estimated to cost \$100,000 or more, an order in triplicate should be sent to the regional purchasing committee with copies of plans and specifications, so that the matter may be submitted to the central advisory purchasing committee for purchase.

Such equipment amounting in the aggregate to less than \$100,000 should be purchased by the individual road, subject to the approval of the regional purchasing committee. Proposals covering such equipment should be tabulated and sent to the regional purchasing committee for approval with complete specifications, blue prints, and other details, accompanied by recommendations as to acceptance and reasons therefore. Equipment purchased by individual roads should as far as practicable comply with the equipment standards of the Railroad Administration.

Surplus Bar Iron on the Great Northern.—The North-

western regional purchasing committee states that the Great Northern has a surplus of bar iron which is available for immediate shipment. Roads in the vicinity of Duluth, Minneapolis and St. Paul requiring iron are asked to draw on this stock before placing orders elsewhere.

Sill Steps for Disposal by the Soo.—The Northwestern regional purchasing committee announces that the Minneapolis, St. Paul & Sault Ste. Marie has 4,800 left-hand single freight car sill steps and 1,800 right-hand double freight car sill steps for safety appliances on box cars available for disposal to other roads. E. T. Stone, purchasing agent of the Soo line at Minneapolis, will supply further information concerning this material.

Surplus Material for Disposal by S. P. & S.—The Northwestern regional purchasing committee announces that the Spokane, Portland & Seattle has for disposal at its Portland shops material including angle bars, various sizes of new galvanized corrugated culvert pipe, four-point Pierce transposition J. brackets, new caboose cupola lamps, several thousand feet of new circular loom, several thousand feet of cable and a number of miscellaneous items.

Solicitation of Labor.—The Northwestern regional director recommends prompt and systematic action in recruiting labor by all railroad officers including foremen, along the following lines:

- (1) The duty of keeping a record of the labor requirements should be placed in the hands of one man or bureau on each railroad under the immediate supervision of the federal or general manager.
- (2) The heads of each department should be required to report to that officer or bureau at stated periods as to their labor requirements and the shortage in the various crafts. These reports should include a statement as to action they are taking in the recruiting of labor.
- (3) A statement of the labor requirements should be sent to every United States employment office on the line.
- (4) Bulletins should be sent out from time to time showing the requirements for labor on each division. Agents should be instructed to post these bulletins where they can be seen by all interested and to solicit the aid of the newspapers in putting before the public the necessity of the railroads in the labor line.
- (5) In districts where the harvesting has been completed or where there has been a failure of crops, an active solicitation should be made to secure for railroad service the men who have been engaged in farm work.
- (6) Reduced building operations generally, and particularly in small towns, should make available carpenters and laborers for car repair work, if energetically solicited.

Routing Telegraphic Traffic Over Railroad Wires.—The regional director of Southwestern roads asks that the routing over railroad wires of all telegraphic traffic originating with officers of agents for agents of one line, destined to officers and agents of another line, or to and from officers of the Railroad Administration, should be over the most available and expeditious route, no matter in what region. In case of doubt or where it seems advisable to expedite the transmission of telegraphic traffic by extending circuits or connecting the circuit of one railroad to the circuits of another, E. A. Chenery, general superintendent of telegraph of the Southwestern region, should be consulted.

Telegraph School Wire Connections.—The Southwestern regional director points out the desirability of encouraging the establishment of telegraph schools by reputable parties in promising communities, because of the acute shortage of telegraphers at the present time. There will, therefore, be no objection to authorizing a *souder only* connection in such a telegraph school, looped to either a railroad despatching or local message circuit (but not to a circuit on which commercial business is handled) provided the parties making the request bear all the expense in connection therewith. E. A. Chenery, general superintendent of telegraph of the region, should be advised of each installation as authorized for his information.

Reduced Fares to Soldiers.—The Southwestern regional director quotes a letter from Edward Chambers, director of the division of traffic of the Railroad Administration, on the subject of reduced fares to officers and enlisted men in

the United States Army. The letter points out that prior to the effective date of the director general's order No. 28 advancing passenger fares and discontinuing special concessions, reduced fares were in effect between a number of military camps and contiguous cities.

Railroad officers are requested to canvass the present situation and to make such recommendations regarding the granting of reduced fares to officers and enlisted men as may be in their judgment advisable. Each situation should be dealt with on its merits and where there are other reasonably satisfactory facilities for moving the men, such as trolley lines or motor buses it will be unnecessary to make any reduction which will have the effect of unduly burdening the steam roads. In cases like that of Camp Upton where there is no other means of transit, it is believed that the men who are largely recruited from New York should have an opportunity to visit their homes occasionally at low fares. It may prove advisable to confine the reduced rates to certain trains or certain days of the week. It is suggested that railroad officers confer with camp commanders so that it may be understood in advance that the soldiers must expect to put up with crowded cars if they are granted reduced rates. As to the measure of the reduction, this is also a matter in which the recommendations of railroad officers are requested. But unless there is some good reason to the contrary the rates should not be less than one fare for a round trip.

It is impracticable to use furlough fare certificates, which are used in connection with the long haul business for which a rate of one cent per mile is authorized, and the only feasible check upon the traffic will be to confine the sale of tickets to men in uniform and wherever possible, to given trains, either regular or special.

Improvements for 1919.—The Southwestern regional director quotes a letter from the director of the division of capital expenditures which states that while in general the ordering of material for 1919 may probably await preparation of the budget, wherever in the judgment of railway officers it is necessary to place immediate orders for materials for essential facilities for 1919 delivery, this should be done without awaiting specific approval.

Loss of Empty Milk and Cream Cans.—The Southwestern regional director quotes a letter from Edward Chambers, director of the division of traffic of the Railroad Administration, which points out that there is a great loss in transportation and a serious delay in the return of empty milk and cream cans throughout the United States, a condition which is particularly serious in its effects on the production and marketing of milk and cream because of the present scarcity and the high cost of the metal of which the cans are made. While conditions governing the transportation of milk vary widely, steps should be taken to adopt whatever plans for marking, waybiling and shipping cans as are most appropriate. Constant inspection should permit unnecessary accumulations, delays, rough handling and other abuses. The general appropriation of the cans by railway employees for use as water kegs and to other ends should be stopped.

Discontinuance of Fines for Mail Failures.—The Southwestern regional director announces that effective September 1, the practice, where now existing, of imposing fines upon train and station employees in connection with mail irregularities will be discontinued. If negligence occurs, discipline should be in some other form than fines. When railroad companies have contracts with teaming companies for handling mail between postoffices and railroad stations, the provisions of the contracts relating to fines will continue to be enforced.

Passenger Fares for War Industry Workmen.—The South-

western regional director announces the fares and arrangements which have been authorized for war industry workmen where special train service is necessary. The fare one way will be six mills per mile, plus five cents, with a minimum of ten cents per capita based on the mileage of the special service from starting point to destination. Fares from intermediate points to destination and vice versa will be the same as the fare between the extreme points covered by service. All trains will earn a minimum of \$3 per train mile. A special form of 10 or 12 trip tickets good for the bearer will be used, limited to 30 days or less. These rates and arrangements are confined to industries and construction contractors engaged wholly in war work. The special forms of 10 or 12 trip tickets will be sold through the industry wherever possible and will be honored only on workmen's trains.

Re-Lettering Express Company Cars.—Express cars should be lettered "American Railway Express," the word "Company" being eliminated.

Expense for Improvements to Be Borne by Two or More

Companies.—The Eastern regional director quotes from a letter of instructions received from R. S. Lovett, Director, Division of Capital Expenditures, that should govern in making improvements which should be borne by two or more companies, and which are not covered by existing agreements.

"(a) Where joint facilities are desired an effort should be made in the first instance to get the companies concerned to agree to the joint improvement and to apportion the cost between them.

"(b) Where the companies will not agree and the federal manager deems the improvement necessary, the improvement shall be ordered and the cost shall be apportioned on such basis as shall be deemed proper, and the federal manager shall make requisitions accordingly; and thus the companies will be left to make claims for damages they may have sustained for having been compelled to make the capital expenditures involved.

"(c) In cases where the companies refuse to assent to the improvement the federal manager shall not order it unless reasonably satisfied that it will justify itself from the government standpoint. Where it will produce increased capacity there will probably be sufficient justification. Where the improvement will not increase capacity but will merely promote economy, the question should be very carefully considered whether the saving for a few years will be sufficient to justify the government in incurring the expenditure, since it is quite possible—the risk varying in different cases—that the government will be compelled to stand it all."

Wage Increase for Agents, Clerks and Laborers

Eight-Hour Day and Raises Amounting to \$25 a Month or
12 Cents an Hour for Million Employees

DIRECTOR GENERAL McADOO on September 5 issued Supplements 7 and 8 to General Order 27, granting further increases in wages to nearly one million employees of railroads under federal control, after recommendations had been made by the Board of Railroad Wages and Working Conditions, based on an exhaustive investigation made by the Board.

Supplement 7 affects all clerks, station employees, stationary enginemen, boiler-washers, power transfer and turntable operators, and common laborers in shops, roundhouses, stations, storehouses and warehouses. It contains general rules for promotion and adjustments of grievances.

Supplement 8 affects all maintenance of way department employees working on tracks, bridges and buildings, and includes painters, mason and concrete workers, water supply employees, plumbers, etc.

The two supplements stabilize wages and remove inequalities occurring in General Order 27.

In the supplements certain basic wage minimums are established.

Generally speaking, the wage increases amount, as compared with the wages paid on January 1, 1918, to \$25 per month for employees paid on a monthly basis, and 12 cents per hour for employees paid on an hourly basis. These increases include any increase granted to these employees put into effect under General Order 27. General Order 27 is cancelled in so far as it applies to these employees.

The new rates are effective as of September 1, 1918. Back pay from January 1, 1918, not already paid out, will of course be based on the rate established in General Order 27. Under these supplements, the eight-hour day is established throughout for these employees, with overtime up to 10 hours on a pro rata basis with time and one-half thereafter. Because of the situation resulting from General Order 27, it is impossible to estimate adequately at this time, how much of an increase in the operating expenses of the railroads these changes will total.

The Supplements are as follows:

Clerks and Miscellaneous Employees

Supplement 7 to General Order 27

Effective September 1, 1918, superseding General Order 27, and in lieu thereof, as to the employees herein named, the following rates of pay and rules for overtime and working conditions for all clerical forces in all departments, and for certain employees in stations, storage or terminal warehouses, docks, storehouses, shops and yards, upon railroads under federal control, are hereby ordered:

ARTICLE I.—RATES OF PAY.

(a) For all employees who devote a majority of their time to clerical work of any description, including train announcers, gatemen, checkers, baggage and parcel room employees, train and engine crew callers and the operators of all office or station equipment devices, (excepting such as come within the scope of existing agreements or those hereafter negotiated with the railroad telegraphers), establish a basic minimum rate of \$62.50 per month; and to this basic minimum rate and all rates of \$62.50 and above, in effect as of January 1, 1918, prior to the application of General Order 27, add \$25 per month, establishing a minimum rate of \$87.50 per month.

(b) This order shall apply to chief clerks, foremen, subforemen and other similar supervisory forces of employees herein provided for.

(c) For office boys, messengers, chore boys and other employees under 18 years of age filling similar positions, and station attendants, establish a basic minimum rate of \$20 per month, and to this basic minimum rate and all rates of \$20 per month and above, in effect as of January 1, 1918, prior to the application of General Order 27, add \$25 per month, establishing a minimum rate of \$45 per month.

(d) For all other employees not otherwise classified, such as janitors, elevator and telephone switchboard operators, office, station and warehouse watchmen, establish a basic rate of \$45 per month, and to this basic minimum rate and all rates of \$45 per month and above, in effect as of January 1, 1918, prior to the application of General Order 27, add \$25 per month, establishing a minimum rate of \$70 per month.

(e) The same increases provided for in Sections (a), (b), (c) and (d) of this article, shall apply to employees named therein paid on any other basis.

(f) The wages for new positions shall be in conformity with the wage for positions of similar kind or class where created.

ARTICLE II.—STATIONARY ENGINEERS (STEAM), FIREMEN AND POWER HOUSE OILERS.

(a) For all stationary engineers (steam), establish a basic minimum rate of \$85 per month, and to this basic minimum rate, and all rates of \$85 and above, in effect as of January 1, 1918, prior to the application of General Order 27, add \$25 per month, establishing a minimum rate of \$110 per month.

(b) This order shall apply to chief stationary engineers.

(c) For all stationary firemen and power house oilers, establish a basic minimum rate of \$65 per month, and to this basic minimum rate, and all rates of \$65 and above, in effect as of January 1, 1918, prior to the application of General Order 27, add \$25 per month, establishing a minimum rate of \$90 per month.

ARTICLE III.—LOCOMOTIVE BOILER WASHERS.

For all locomotive boiler washers who were on January 1, 1918, prior to the application of General Order 27, receiving less than 26 cents per hour, establish a basic minimum rate of 26 cents per hour, and to this basic minimum rate, and all hourly rates of 26 cents and above, add 12 cents per hour, establishing a minimum rate of 38 cents per hour, provided that the maximum shall not exceed 50 cents per hour.

ARTICLE IV.—POWER TRANSFER AND TURNTABLE OPERATORS.

For all operators of power driven transfer and turntables who were on January 1, 1918, prior to the application of General Order 27, receiving less than 21 cents per hour, establish a basic minimum rate of 21 cents per hour, and to this basic minimum rate, and all hourly rates of 21 cents and above, add 12 cents per hour, establishing a minimum rate of 33 cents per hour, provided that the maximum shall not exceed 45 cents per hour.

ARTICLE V.—SHOP, ROUNDHOUSE, STATION, STOREHOUSE AND WAREHOUSE EMPLOYEES (EXCEPT EMPLOYEES PROVIDED FOR IN HARBOR AWARDS).

(a) For all laborers employed in and around shops, roundhouses, stations, storehouses and warehouses (except employees provided for in harbor awards), such as engine watchmen and wipers, fire builders, ashpitmen, boiler washer helpers, flueborers, truckers, stowers, shippers, coal-passers, coal chute men, etc., who were on January 1, 1918, prior to the application of General Order 27, receiving less than 19 cents per hour, establish a basic minimum rate of 19 cents per hour, and to this basic minimum rate, and all hourly rates of 19 cents and above, add 12 cents per hour, establishing a minimum rate of 31 cents per hour, provided that the maximum shall not exceed 43 cents per hour.

(b) For all common labor in the departments herein referred to and not otherwise provided for, who were on January 1, 1918, prior to the application of General Order 27, receiving less than 16 cents per hour, establish a basic minimum rate of 16 cents per hour, and to this basic minimum rate and all hourly rates of 16 cents and above, add 12 cents per hour, establishing a minimum rate of 28 cents per hour, provided that the maximum shall not exceed 40 cents per hour.

ARTICLE VI.—MONTHLY, WEEKLY OR DAILY RATES.

For all monthly, weekly or daily rated employees, in the departments herein referred to, and not otherwise provided for, increase the rates in effect as of January 1, 1918, prior to the application of General Order 27, on the basis of \$25 per month.

ARTICLE VII.—MAXIMUM MONTHLY WAGE.

No part of the increases provided for in this order shall apply to establish a salary in excess of \$250 per month.

ARTICLE VIII.—PRESERVATION OF RATES.

(a) The minimum rates, and all rates in excess thereof, as herein established, and higher rates which have been authorized since January 1, 1918, except by General Order 27, shall be preserved.

(b) Employees temporarily or permanently assigned to higher rated positions, shall receive the higher rates while occupying such positions; employees temporarily assigned to lower rates positions shall not have their rates reduced.

ARTICLE IX.—EXCEPTION.

The provisions of this order will not apply in cases where amounts less than \$30 per month are paid to individuals for special service which only takes a portion of their time from outside employment or business.

ARTICLE X.—HOURS OF SERVICE.

Eight consecutive hours, exclusive of the meal period, shall constitute a day's work.

ARTICLE XI.—OVERTIME AND CALLS.

(a) Where there is no existing agreement or practice more favorable to the employees, overtime shall be computed for the ninth and tenth hour of continuous service, pro rata on the actual minute basis, and thereafter at the rate of time and one-half time. Even hours will be paid for at the end of each pay period; fractions thereof will be carried forward.

(b) When notified or called to work outside of established hours employees will be paid a minimum allowance of three hours.

(c) Employees will not be required to suspend work during regular hours to absorb overtime.

ARTICLE XII.—PROMOTION AND SENIORITY.

(a) Promotions shall be based on ability, merit and seniority; ability and merit being sufficient, seniority shall prevail, except, however, that this provision shall not apply to the personal office forces of such officers as superintendent, trainmaster, division engineer, master mechanic, general freight or passenger agent, or their superiors in rank and executive officers. The management shall be the judge, subject to an appeal, as provided in Article XIII.

(b) Seniority will be restricted to each classified department of the general and other offices and of each superintendent's or master mechanic's division.

(c) Seniority rights of employees referred to herein, to: (1) New positions, (2) vacancies: will be governed by paragraphs (a) and (b) of this article.

(d) Employees declining promotion shall not lose their seniority.

(e) Employees accepting promotion will be allowed 30 days in which to qualify, and failing, will be returned to former position without loss of seniority.

(f) New positions or vacancies will be promptly bulletined for a period of five days in the departments where they occur. Employees desiring such positions will file their applications with the designated official within that time, and an appointment will be made within 10 days thereafter. Such position or vacancy may be filled temporarily pending an assignment. The name of the appointee will immediately thereafter be posted where the position or vacancy was bulletined.

(g) In reducing forces, seniority shall govern. When forces are increased employees will be returned to the service and positions formerly occupied, in the order of their seniority. Employees desiring to avail themselves of this rule must file their names and addresses with the proper official. Employees failing to report for duty or give satisfactory reason for not doing so within seven days from date of notification will be considered out of the service.

(h) A seniority roster of all employees in each classified department who have been in the service six months or more, showing name, date of entering the service and the date of each promotion or change, will be posted in a place accessible to those affected.

(i) The roster will be revised and posted in January of each year, and shall be open to correction for a period of 60 days from date of posting, on presentation of proof of error by an employee or his representative. The duly accredited representative of the employee shall be furnished with a copy of roster upon written request.

ARTICLE XIII.—DISCIPLINE AND GRIEVANCES.

(a) An employee disciplined, or who considers himself unjustly treated, shall have a fair and impartial hearing, provided written request is presented to his immediate superior within five days of the date of the advice of discipline, and the hearing shall be granted within five days thereafter.

(b) A decision will be rendered within seven days after the completion of hearing. If an appeal is taken it must be filed with the next higher official and a copy furnished the official whose decision is appealed within five days after date of decision. The hearing and decision on the appeal shall be governed by the time limits of the preceding section.

(c) At the hearing or on the appeal the employee may be assisted by a committee of employees or by one or more duly accredited representatives.

(d) The right of appeal by employees or representatives, in regular order of succession and in the manner prescribed up to and inclusive of the highest official designated by the railroad, to whom appeals may be made, is hereby established.

(e) An employee on request will be given a letter stating the cause of discipline. A transcript of evidence taken at the investigation or on the appeal will be furnished on request to the employee or representative.

(f) If the final decision decrees that charges against the employee were not sustained, the record shall be cleared of the

charge; if suspended or dismissed, the employee shall be returned to former position and paid for all time lost.

(g) Committees of employees shall be granted leave of absence and free transportation for the adjustment of differences between the railroad and the employees.

ARTICLE XIV.—RULES FOR APPLICATION OF THIS ORDER.

(a) It is not the intention of this order to change the number of days per month for monthly paid employees. The increases per month provided for herein shall apply to the same number of days per month which were worked as of January 1, 1918.

(b) The pay of female employees for the same class of work shall be the same as that of men, and their working conditions must be healthful and fitted to their needs. The laws enacted for the government of their employment must be observed.

ARTICLE XV.—INTERPRETATION OF THIS ORDER.

The rates of pay and rules herein established shall be incorporated into existing agreements, and into agreements which may be reached in the future on the several railroads, and should differences arise between the management and the employees of any of the railroads as to such incorporation, intent or application of this order prior to the creation of additional railway boards of adjustment, such questions of difference shall be referred to the director of the Division of Labor for decision, when properly presented, subject always to review by the director general.

Agreements or practices, except as changed by this order, remain in effect.

Maintenance of Way Employees

SUPPLEMENT No. 8 TO GENERAL ORDER No. 27.

Effective September 1, 1918, superseding General Order 27, and in lieu thereof, as to the employees herein named, the following rates of pay and rules for overtime and working conditions for all employees in the maintenance of way department (except mechanics and helpers were provided for in Supplement 4, General Order 27, and clerical forces), upon railroads under federal control are hereby ordered:

ARTICLE I.—RATES OF PAY.

(a) For all building, bridge, painter, signal and construction, mason and concrete, water supply, maintainer and plumber foremen, establish a basic minimum rate of \$90 per month, and to this basic minimum rate and all rates of \$90 per month and above in effect as of January 1, 1918, prior to the application of General Order 27, add \$25 per month, establishing a minimum rate of \$115 per month.

(b) For all assistant building, bridge, painter, signal and construction, mason and concrete, water supply, maintainer and plumber foremen and for coal wharf, coal chute, and fence gang foremen, pile-driver, ditching and hoisting engineers, and bridge inspectors, establish a basic minimum rate of \$80 per month and to this basic minimum rate and all rates of \$80 per month and above, in effect as of January 1, 1918, prior to the application of General Order 27, add \$25 per month, establishing a minimum rate of \$105 per month.

(c) For all track foremen establish a basic minimum rate of \$75 per month, and to this basic minimum rate and all rates of \$75 per month and above in effect as of January 1, 1918, prior to the application of General Order 27, add \$25 per month, establishing a minimum rate of \$100 per month.

(d) Rates of pay for all assistant track foremen will be five cents per hour in excess of the rate paid laborers whom they supervise.

(e) For all mechanics in the maintenance of way and bridge and building departments, where not provided for in Supplement 4 to General Order 27, who were on January 1, 1918, prior to the application of General Order 27 receiving less than 40 cents per hour, establish a basic minimum rate of 40 cents per hour, and to this basic minimum rate and all rates of 40 cents per hour and above, add 13 cents per hour, establishing a minimum rate of 53 cents per hour.

(f) For helpers to all mechanics in the maintenance of way and bridge building departments, where not provided for in Supplement 4 to General Order 27, who were on January 1, 1918, prior to the application of General Order 27, receiving less than 30 cents per hour, establish a basic minimum rate of 30 cents per hour, and to this basic minimum rate and all hourly rates of 30 cents per hour and above add 13 cents per hour, establishing a minimum rate of 43 cents per hour.

(g) For track laborers and all other classes of maintenance of way labor not herein named, who on January 1, 1918, prior to the application of General Order 27, were receiving less than 16 cents per hour, establish a basic minimum rate of 16 cents per hour, and to this basic minimum rate and all hourly rates of

16 cents per hour and above, add 12 cents per hour, establishing a minimum rate of 28 cents per hour, provided that the maximum shall not exceed 40 cents per hour.

(h) For drawbridge tenders and assistants, pile-driver, ditching and hoisting firemen, pump engineers and pumpers, crossing watchmen or flagmen, lamp lighters and tenders, add to the rate in effect as of January 1, 1918, prior to the application of General Order 27, \$25 per month.

(i) The wages for new positions shall be in conformity with the wages for positions of similar kind or class in department where created.

ARTICLE II.—WEEKLY, MONTHLY OR DAILY RATES.

For all monthly, weekly or daily rated employees in the departments herein referred to, and not otherwise provided for, increase the rates in effect as of January 1, 1918, prior to the application of General Order 27 on the basis of \$25 per month.

ARTICLE III.—MAXIMUM MONTHLY RATE.

(Same as Article VII., Supplement 7.)

ARTICLE IV.—PRESERVATION OF RATES.

(Same as Article VIII., Supplement 7.)

ARTICLE V.—EXCEPTION.

(Same as Article IX., Supplement 7.)

ARTICLE VI.—HOURS OF SERVICE.

Eight (8) consecutive hours, exclusive of the meal period, shall constitute a day's work.

ARTICLE VII.—OVERTIME AND CALLS.

(Same as Article XI., Supplement 7.)

ARTICLE VIII.—PROMOTION AND SENIORITY RIGHTS.

(a) Promotions shall be based on ability, merit and seniority. Ability and merit being sufficient, seniority shall prevail. The management shall be the judge, subject to an appeal, as provided for in Article IX.

(b) The seniority rights of laborers as such will be restricted to their gangs; except where gang is abolished they may displace laborers in other gangs who are junior in service.

(c) Except as provided for in Section (b) of this Article the seniority rights of employees referred to herein, to: (1) New positions, (2) vacancies: will be governed by Section (a) of this Article, and will be restricted to the maintenance division upon which employed.

(d) Employees declining promotion shall not lose their seniority.

(e) Employees accepting promotion will be allowed 30 days in which to qualify, and failing, will be returned to former position without loss of seniority.

(f) New positions or vacancies will be promptly bulletined for a period of five days at the tool house or in the department where they occur. Employees desiring such positions will file their applications with the designated official within that time and the appointment will be made within 10 days thereafter. Such position or vacancy may be filled temporarily pending assignment. The name of the appointee will immediately thereafter be posted where the position or vacancy was bulletined.

(g) In reducing forces, seniority shall govern; foremen will displace other foremen who are their junior in service before displacing laborers. When forces are increased, employees will be returned to the service and positions formerly occupied in the order of their seniority. Employees desiring to avail themselves of this rule must file their names and addresses with the proper official. Employees failing to report for duty or to give satisfactory reason for not doing so within seven days from date of notification will be considered out of the service.

(h) Employees furloughed for six months or less will retain their seniority.

(i) A seniority roster of all employees in each classified department, showing name, date of entering the service, and date of promotion will be posted in a conspicuous, accessible place in each roadmaster's or supervisor's office. The names of laborers who have been in the service at least six months prior to date roster is posted or revised will be shown, with their relative standing, and the date they entered the service.

(j) The roster will be revised and posted in January of each year, and shall be open to correction for a period of 60 days after date posted on presentation of proof of error by an employee or representative. A copy will be furnished to each foreman or duly accredited representative upon request.

ARTICLE IX.—DISCIPLINE AND GRIEVANCES.

(Same as Article XIII., Supplement 7.)

ARTICLE X.—GENERAL RULES.

(a) For main line, branch line and yard section men, the

day's work will start and end at point designated to report for duty at their respective sections or yards.

(b) Employees taken from their regular assignment or outfit, to work temporarily elsewhere, will be furnished with board and lodging at the railroad's expense.

(c) Unless they so desire, except in emergency, employees shall not be transferred from one division to another.

ARTICLE XI.—RULES FOR APPLICATION OF THIS ORDER.

(Same as Article XIV., Supplement 7.)

ARTICLE XII.—INTERPRETATION OF THIS ORDER.

(Same as Article XV., Supplement 7.)

Coach Cleaners

The director general also issued an addendum to Supplement 4 to General Order 27, providing the following rates of pay and rules for coach cleaners:

ARTICLE I.—RATES OF PAY.

(a) For coach cleaners who were on January 1, 1918, prior to the application of General Order 27, receiving less than 16 cents per hour, establish a basic minimum rate of 16 cents per hour, and to this basic minimum rate and all hourly rates of 16 cents and above, add 12 cents per hour, establishing a minimum rate of 28 cents per hour, provided that the maximum shall not exceed 40 cents per hour.

(b) All coach cleaners shall be paid on the hourly basis.

ARTICLE II.—PRESERVATION OF RATES.

(a) The minimum rates and all rates in excess thereof, as herein established, and higher rates which have been authorized since January 1, 1918, except by General Order 27, shall be preserved.

(b) Coach cleaners temporarily or permanently assigned to higher rated positions shall receive the higher rates while occupying such positions; coach cleaners temporarily assigned to lower rated positions shall not have their rates reduced.

ARTICLE III.—HOURS OF SERVICE.

Eight consecutive hours, exclusive of the meal period, shall constitute a day's work.

ARTICLE IV.—OVERTIME.

(a) Where there is no existing agreement or practice more favorable to the employees, overtime will be computed for the ninth and tenth hour of continuous service, pro rata on the actual minute basis, and thereafter at the rate of time and one-half time. Even hours will be paid for at the end of each day period; fractions thereof will be carried forward.

(b) Coach cleaners will not be required to suspend work during regular hours to absorb overtime.

ARTICLE V.—APPLICATION.

The rates of pay and rules herein established shall be incorporated into existing agreements on the several railroads.

Austrian Railways Seriously Crippled

JULIAN GRANDE, writing to the New York Times from Berne, Switzerland, on June 28, gives some interesting facts concerning the condition of the Austrian railways. The following extracts are taken from his article:

Now that the bread ration has been reduced to a little more than three ounces a day, it is not likely that the underfeeding of railway servants, which was so bitterly complained of in the Austrian Parliament at its Spring session, will improve.

In the 1917 report of the Aussig-Teplitz line in Bohemia (twelve miles long only, yet of considerable importance), it was stated that iron, coal, sleepers, and lubricants generally cost from twice to four times as much as in 1913, and that even for so small a line \$1,100,000 has had to be paid out in assistance to employees and for other causes due to the war. The total takings amounted to 8 per cent more than in 1916, but the total expenditure amounted to 23 per cent more, the railway being in consequence considerably on the wrong side in its finances. Moreover, it was complained that a very large number of trucks and carriages needed repairing, and there was neither labor nor material with which to repair them.

Meanwhile the Austrian Southern Railway receipts for 1917 are also on the wrong side by \$2,661,540. This unsatisfactory balance sheet is attributed solely to the fact that the Southern Railway during 1917 was used more than ever for military purposes, including the transport of troops, who were, of course, carried at a very low rate, which did not enable the company to cover its expenses.

Negotiations are in progress between the Austrian and Hungarian government to raise this military tariff, and to make the rise date back to January 1 this year. Ordinary civilian traffic, of course, had to be pushed on one side in order to make way for troop transport.

The traffic receipts of the Southern Railway amounted to about \$150,000,000, or more than \$10,000,000 in excess of the 1916 receipts; but the total receipts from all sources were less than those of 1916. Writing off was also heavy, and, in short, the company is considerably on the wrong side.

The scarcity of paper has compelled the Austrian Ministry of Railways to limit the cardboard used for railway tickets by issuing on frequented stretches tickets half the ordinary size. In the last eighteen months Austrian railway fares have been twice raised, and in order to economize paper the invalid tickets were each time called in, "ungültig" (invalid) was stamped on them on one side, and the new fare on the other side. In the last year and a half the Austrian State Railways complain that they have had to print 400,000,000 tickets.

Late News from Washington

"Shipping Day" Committees

AS ANNOUNCED in the *Railway Age* of July 9, page 261, the Car Service Section has established committees for the several regional districts to consider sailing day plans and the efficient handling of l.c.l. freight. On Wednesday, the Section issued a statement to the railroads in which it defined the duties of these committees as follows:

These committees will, without delay, have a survey made covering l. c. l. freight forwarded for a period of at least 10 days from all stations and transfer points in their respective territories, and will institute "shipping days" and through car loading via one or more designated routes based on the following considerations: (a) Volume of traffic; (b) direct routing; (c) car conservation.

The committee for each region will determine the routing on cars destined to points within the same region.

The chairmen and such members of the regional committees as may be designated by the chairmen will, with the Car Service Section, act as a general committee to determine the routing and adjust necessary matters affecting inter-region cars.

Care must be exercised to prevent any undue advantage being given to one city or section as against a nearby competing city or section.

The support of shippers, jobbers and various commercial organizations in each locality should be obtained for the detailed plans as adopted.

As arrangements are perfected for each shipping center or distributing point, chairmen will furnish to the regional director and to the Car Service Section, a detailed report showing:

- (a) Number of additional through cars established.
- (b) Estimated increase in tonnage per car.
- (c) Estimated daily or weekly saving in equipment.

The chairmen will advise the Car Service Section of opportunities for improved loading through the back hauling of freight, particularly from far distant points, as for example freight from Boston, New York, or Philadelphia, destined to local points within a radius of one hundred miles

east of San Francisco, which might be loaded to advantage in through cars to San Francisco, involving but one intermediate handling, as against several such handlings if loaded in cars carded to points east of San Francisco.

As announced in detail in the *Railway Age* of July 9, the chairmen of the regional committees are as follows:

J. R. Kearney	Allegheny Region.
George Morton	Central Western Region.
C. H. Ketcham	Eastern Region.
T. M. Proctor	North Western Region.
J. A. Talbott	Pacahontas Region.
W. L. Stanley	Southern Region.
F. M. Lucore	South Western Region.

Interpretation of Wage Order

For the purpose of affording prompt interpretations of all wage orders issued by the director general, the duties and authority of the Board of Railroad Wages and Working Conditions are extended by supplement 6 to General Order 27, to include investigations and recommendations to the director general of interpretations of all such wage orders, when requested to do so by the Director of the Division of Labor. The supplement states that it should be understood by railroad employees that it is impracticable to give interpretation on exparte statement, to the thousands who request information as to the manner in which wage orders should be applied in individual cases. Operating officials of the railroads are required to place wage orders in effect fairly and equitably, and should differences of opinion arise necessitating a formal interpretation, the matter will be disposed of in the following manner:

When a wage order is placed in effect in a manner with which an employee, or the employee's committee disagrees, a joint statement quoting the language of the wage order, and including the contentions of employees and the contentions of officials, signed by the representatives of the employees and the officials, will be transmitted to the director of labor, who will record and transmit same to the Board of Railroad Wages and Working Conditions, which will promptly investigate and make recommendation to the director general. Upon the receipt of interpretation from the director general, the director of labor will transmit such interpretation to the Railway Boards of Adjustment for their information and guidance, in the application of such interpretation to existing conditions, or to questions arising from the incorporation of the order as so interpreted into existing agreements on all railroads under federal control. As occasion demands, all interpretations will be printed and given general publicity, for the purpose of communicating the information to all concerned, and thus avoiding the necessity of duplication of interpretations.

On and after September 1, 1918, any disagreement between the employees and the officials, over the application of any wage order, will be submitted to the director of labor, as outlined above, but in order promptly to dispose of all requests for interpretations previously presented to the division of labor, or to the Boards of Adjustment, such requests will be immediately recorded and transmitted to the Board of Railway Wages and Working Conditions by the director of labor.

Nothing contained in the supplement revokes authority granted to the Division of Labor or Railway Boards of Adjustment in determining disputes arising in connection with the application of interpretations of wage orders to existing conditions, or in connection with the incorporation of such interpretations into existing agreements.

Division of Inland Waterways Created

Director General McAdoo has announced the appointment of G. A. Tomlinson as director of the Division of Inland Waterways of the United States Railroad Administration. The new division will be on an equal plane with the other principal divisions of the Railroad Administration. Under

Mr. Tomlinson's general direction will be the Erie canal, the Delaware and Raritan canal, the Cape Cod canal, the Mississippi & Warrior waterways and any other inland waterways which may be taken under the control of the Railroad Administration in the future.

Mr. Tomlinson at the present time is federal manager of New York and New Jersey canals under the Railroad Administration and also had been a member of the Inland Waterways Committee. The position of federal manager of New York and New Jersey canals previously held by him, will be filled in the near future.

The director general called into conference on Wednesday the members of the Inland Waterways Committee, headed by Major General W. M. Black, which he appointed on February 16, 1918, and thanked them for their splendid work. He informed the members of the committee that since it had performed the work for which it was created, he had decided to relieve it of its duties and place the administrative supervision of the Inland Waterways under the control of the Railroad Administration, under the direction of Mr. Tomlinson. The Inland Waterways Committee has investigated a number of projects on which it has reported to the director general. In a number of instances these recommendations have been adopted by him and are now in effect. The director general expressed particular appreciation of the conscientious manner in which the members of the committee performed their duties.

Increasing the Capacity of a Water Softener Without Enlargement

By C. R. Knowles

Superintendent Water Service, Illinois Central, Chicago

PREVIOUS TO 1907 the water used at the Waterloo, Iowa, shops of the Illinois Central was secured largely from two wells at the shops, although these wells did not furnish all the water required and it was necessary to purchase considerable water from the Waterloo Water Co. The waters from the company wells and from the city plant were both very hard, however, and caused a great deal of trouble and expense from scaling and other evils. In 1907 three additional wells were drilled and a water softening plant was installed. This softener was of the intermittent type with a capacity of 12,000 gal. per hour. This installation dispensed with the purchase of water from the city and the softened water eliminated much of the boiler trouble and resultant engine failure due to bad water.

The requirements for water increased from approximately 300,000 gal. per day in 1907 to over 400,000 gal. per day in 1915, which was far in excess of the rated capacity of the softener. By utilizing a 100,000 gal. reservoir for the storage of untreated water it was possible to use a surface pump from the reservoir in filling the treating tanks as well as the deep well pumps. In this manner the time of filling the treating tanks was reduced from two hours to one hour and the capacity of the plant increased to about 14,000 gal. per hour. The consumption continued to increase, however, and in 1916 the capacity of the softener was again exceeded. Partly treated and milky water was pumped over to the roadside tank whenever the softener was operated in excess of its rated capacity.

Plans were then made to increase the capacity of the softener, but it was found impossible to install additional tanks on account of the limited space. Moving the softener was practically out of the question on account of the heavy expense and lack of a desirable location; therefore, it was decided to leave the softener in the original location and in-

crease the capacity by converting it from an intermittent to a continuous type softener.

The tanks are 25 ft. 6 in. in diameter with 18 ft. 6 in. staves, inside measurements, with a capacity of 71,000 gal. each or a combined capacity of 142,000 gal. By converting the plant to a continuous system it was found that the capacity could be increased to 35,000 gal. per hour and allow four hours settling time, or the same as the intermittent system. As before stated, the space was very limited, there being no room to the west, north or south of the softener tanks and only a very limited space to the east which was utilized for the filters which were installed with the remodeled softener. This necessitated putting the chemical mixing tank above, supporting it on top of the two main settling tanks.

The original softener was typical of the average intermittent plant with two main settling tanks with agitators driven by bevel gearing from a shaft across the top of tanks. The power to drive the agitators was furnished by a small steam engine, and the lime and soda ash were mixed in a small tank located on the ground floor, the chemicals being elevated to the settling tanks by means of a steam jet pump. The softened water was drawn off from the top through floating outlet pipes.

In remodeling the old plant practically all of the old ma-

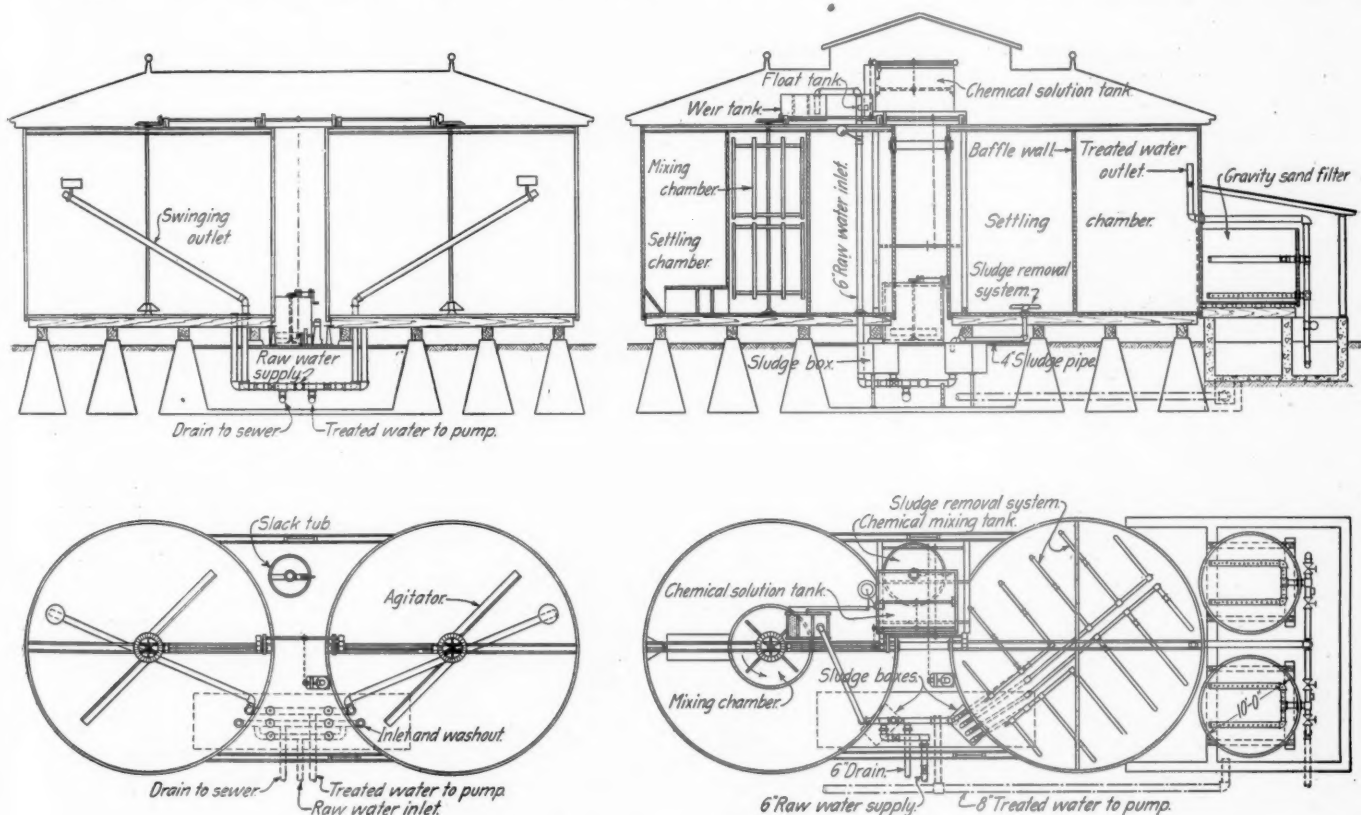
was divided into three parts and each tank was provided with a sludge box to prevent overloading the drain.

The remodeled softener was equipped with filters, as the old system, which was not provided with filters, gave a great deal of trouble from milky water. The filter system consisted of two 10-ft. gravity sand filters located east of the softener in the only available space. A concrete clear water basin was constructed beneath the filters with a capacity of 13,000 gal., as it was preferable to pump from the clear water basin rather than direct from filters.

The work of rebuilding the plant and converting it to a continuous system was done by the International Filter Company, Chicago.

An American's Observations On the Railways of Japan

TRAINS THAT ARE NEVER LATE, high grade labor that earns \$25 a month, all employees in uniform and discipline so severe that disobedience of the rules may result in a lengthy term in jail, are some of the characteristics of railway operation in Japan that were observed by a member of the Russian Railway Service Corps. This ob-



Plans and Sections of Old and Revised Treating Plants

terial was utilized. The roof was raised over the center of the tanks to permit the installation of the chemical solution tank and the chemical feeding equipment on top of the tanks. A mixing chamber 8 ft. in diameter was installed in the west tank with agitators driven in the same manner and with the same shafting as formerly used with the intermittent system. Also the lime and soda ash are weighed and delivered to the solution tank with the same equipment as with the intermittent system. A baffle wall was constructed through the center of the east tank and sludge removal systems were installed in both tanks. The drain from the old softener was long and the course uncertain, so the sludge removal system

server had a week's trip over the Japanese railways and has given an idea of his experiences in the following report:

We covered about 2,000 miles of their lines and we were very agreeably surprised in what we found as to the general condition. While it is no doubt a truthful saying that railways are never finished, we think the railways in Japan are as nearly finished as is possible and much more nearly so than any we have ever seen. Every bit of work that they do, whether on branch lines or main line, is permanent. The road is all well ballasted with good clean gravel and crushed rock; power and equipment are in first-class condition, locomotives are kept perfectly clean and there is not a piece of

material of any kind or any grass or dirt on the right-of-way. They have fine station layouts and in the larger cities such as Tokyo, Yokohama, Kobe and Osaka they have fine station buildings, the best of course being at Tokyo, the capital. We were shown through the private waiting rooms of the Imperial family in that building and they are very gorgeous.

They have miles and miles of rip-rap of dry masonry work, some of which has been in place for over 30 years and is as good now as the day it was laid. The drainage ditches are laid with stone, sliding cuts are faced with dry wall masonry, tunnels are all of two bore, one for each track, and are brick lined with portals faced with stone and well drained. On high fills they plant a tough grass which overcomes any running off of material with the result that the fills are as perfect as the day they were made. Left hand operation is used on double track.

They have locomotives built in America, Germany, England and Japan. Those built in Japan are left hand, i. e., the engineer is on the left hand side. This is on account of the signals on double and single track being on the left hand side.

They have no train despatchers, the same system as is in use in England and Russia being used for movement of trains, i. e., station masters despatch trains from station to station by the use of the staff. The blocking is absolute, and a train having the staff can go either way. During our entire trip every train we traveled on was on time. If one makes inquiry at a station as to a train being on time it is considered rather a foolish question, as they are always on time. Sidetracks are close together, averaging two and one-half miles apart, and every sidetrack has a day and a night station force.

Labor at 30 Cents a Day

The station forces work 24 hours continuously and are then off for 24 hours. Train and enginemens work on an average of ten hours.

Conductors are called guards. Salaries are very low, engineers and conductors average 50 yen per month; firemen, brakemen and station masters, 30 yen; and station help 20 yen (a yen being equal to 50 cents). Track, roundhouse and other labor average 60 sen per day; a sen being equal to our one-half cent. All employees are of course in the war department, as the railways are government owned and every employee is uniformed, even the common laborers. All except common laborers are furnished one uniform per year by the railway; laborers buy their own. Station master's and guard's uniforms cost 12 yen or \$6 each.

Engines of freight trains are rated on a car basis, and they have no system of tonnage; 40 cars is the maximum down mountains and 20 cars at all other points. The largest Mallet engines they have are of about 51,000 lb. tractive effort, and their Consolidation engines about 30,000 lb. tractive effort. There are three classes of passenger cars, first, second and third, but there is very little first-class travel.

Passenger Fares by Zones

Passenger and freight rates are made up from zones, the rates being the same for the first 50 miles, the next zone 100 miles, the next 200, the next 300 and the next 400 miles and all over. In other words you can travel for the same fare to a point 800 miles as to one 400 miles.

All stations are equipped with gates for passengers who must show tickets before entering trains as no ticket collections are made on the train. When leaving the train passengers are required to pass out of a gate and tickets are taken up by station master. There is no such thing as paying fare on the train. Stations are not called in passenger trains, but on stopping at a station members of the station force pass along the side of the cars on the platform and call out the name of the station. Station stops are not

as long as in the United States. Baggage is all handled in and out of the cars through the windows and never through the doors. They have a large force at each station whose duty it is to take the baggage out of the windows. At the larger stations they provide on the platform what they call toilets and which mean a wash room. These are all open, equipped with brass wash basins and hot and cold water. Passengers furnish their own soap and towels. When trains stop at these principal stations the passengers rush to these toilets and wash up. You will notice this especially at the first stop after a night run. We traveled part of the way on their train De Luxe which has eight cars and makes but few stops, has an observation car, a full sized dining car and first and second class sleepers, the first class being compartment cars. All of the sleeping car berths are single, a little too small for a large man, but very comfortable.

In switching or giving signals a green and a red flag are used by day and a green and a red lantern by night. When the green is waving or moving the engine moves; immediately on display of the red they stop. This requires every switchman to carry two flags in the day time and a combination lantern showing red on one side and green on the other at night.

We saw but one coal dock, and this was very similar to the Great Northern type. At all other coaling stations the work is done by carrying the coal in small baskets which hold about 20 lb. In doing track work everything is systematized, even to tamping for which they use a tamping pick. Section crews are all of an even number of men, usually six; one man does the singing and every man's pick must hit the ballast at the same time. Rails are all laid with square joints. At every station they have a platform on each track where double tracked, and where they have a single track there is a platform passing siding so there is no such thing as passengers crossing tracks. In fact it is a violation of the law, which is rigidly enforced, to walk on or to cross over tracks. Where necessary overhead or under-grade crossings lead from the main station building to the opposite track.

Severe Discipline

In discipline everything is handled the same as in the army. Violations of rules or instructions are punished, first by dismissal from the service and then the Department of Justice steps in. The man is given a court trial and if they find him guilty he is given a penitentiary sentence. We learned of a case of an assistant station master, who was intoxicated, giving a train a staff while there was a train ahead in the block. A collision resulted, one or two employees killed, and the assistant station master was given five years in the penitentiary. The result of this discipline is a very close observance of the rules and instructions, making it unnecessary to have traveling engineers or train masters, auditors, inspectors, etc., as a man's duty is all covered by instructions and he realizes that unless he performs his duty he will be taken to task by the court. They have division superintendents and master mechanics.

Sizing up the entire railroad, including its operation, we think it is excellent. They handle a very heavy business and the people are well satisfied. Congress recently appropriated four hundred million yen or two hundred million dollars for new lines to be built within the next ten years. All of the railway officials want to start standardizing the gage as soon as it can be done, and I would not be surprised to see this started shortly after the close of the war.

JAPANESE LOAN FOR NEW RAILWAY.—The July 11 issue of the Seoul Press says that a loan of 10,000,000 yen (\$4,980,000) from Japan, to be used for the construction of the Kirin-Hoilyong Railway, has been concluded.

Locomotive Stokers and Smoke Prevention*

With Careful Firing Lighter Fires Can Be Carried Which
Permits More Perfect Combustion

By W. S. Bartholomew
President, Locomotive Stoker Company

THE BURNING OF BITUMINOUS FUEL in locomotive fireboxes presents many problems that are not present in connection with either hand-fired or mechanically-fired batteries of boilers in stationary plants. In the first place, the conventional design of locomotive fireboxes is laid down on the basis of burning approximately 100 lb. of coal per square foot of grate area per hour, and this is often exceeded in actual service under severe conditions by 50 per cent; or, in other words, it is not unusual, under stress conditions, to find that 150 lb. of coal is consumed per square foot of grate area per hour in a locomotive firebox. In the second place, the load factor of a locomotive has such wide variations that it is practically impossible to keep the amount of smoke emitted from the locomotive stack down to what might be readily considered possible in stationary plants, as with a maximum horsepower of a locomotive requiring 100 lb. or more coal per square foot of grate area per hour, as just mentioned, it is necessary to build the fire up to the point where that amount of coal can be consumed to evaporate the necessary amount of water to secure maximum horsepower, and oftentimes just as this is accomplished the point is reached where it is necessary to shut off the power entirely and drift, or use very little of the capacity of the locomotive. It will readily be appreciated that such wide variation of power requirements makes it necessary to meet the smoke problem on locomotives burning bituminous coal by intelligent handling on the part of the fireman, either when hand-firing, or mechanically firing, locomotives.

The prime purpose of the application of a mechanical stoker to locomotives at the present time is not along the lines of smoke prevention except in a few rare cases which I will mention later. For the purpose of comparison as between the general run of locomotives in service before mechanical stokers were applied in any number to the locomotives of today, I might say that the average tractive effort of locomotives recently ordered by the United States Railroad Administration is practically double what it was when the Master Mechanics' Association began to investigate the subject of mechanical stokers for locomotives. At that time the tractive effort of locomotives being turned out by the builders averaged about 33,000 lb., whereas today the average is about 60,000 lb. The Mallet locomotives now being delivered to the Virginian are the largest Mallet locomotives ever built. They have a tractive effort of approximately 160,000 lb. and would not have been built had it not been possible to mechanically fire them.

The 4,500 mechanical stokers which have been sold for locomotives to date are distributed over several classes of locomotives, beginning at approximately 50,000 lb. tractive effort, and running to about 100,000 lb., the largest number being on Mikados averaging about 55,000 lb., the next largest on 2-10-2 locomotives averaging about 75,000 lb. and the third in importance are the Mallets, averaging 85,000 lb. To date only about 25 stokers have been applied to switching locomotives and these mainly for the purpose of smoke prevention in the Chicago district by the Pennsylvania Lines West for use in transfer service, where the locomotives were worked to approximately their capacity, and where it

seemed necessary to do everything possible to reduce the smoke to the lowest possible minimum.

On all these classes of locomotives which I have just mentioned, the first consideration in applying the stokers was the supplying of the necessary amount of coal to produce the maximum horsepower when necessary to work such locomotives to their maximum capacity. The grate areas of these locomotives vary from 56 sq. ft. to about 100 sq. ft., and on the basis of the use of 100 lb. to 120 lb. of coal per square foot of grate area per hour, these locomotives consume from 6,000 to 12,000 lb. of coal per hour of ordinary quality, and in the districts where very low-grade fuel is used, the coal consumption runs from 7,000 to 15,000 lb. of coal per hour.

It will be readily seen, therefore, that many of these locomotives require more coal than can either conveniently or readily be put into the firebox by hand with the scoop through the ordinary firedoor, even if the fireman were the most expert obtainable, and had the physical stamina to perform the work through any extended period. The use of mechanical stokers on such locomotives, therefore, became a necessity rather than a desirability, even though a humanitarian purpose was accomplished by their application.

In the writer's judgment, the second important consideration in connection with the application of mechanical stokers to locomotives comes in connection with the use of lower grade fuel than can readily be used for hand-firing. This lower grade fuel is not always represented by a less number of B.t.u.'s. per pound, although this is often the case. The firemen very often complain of "poor coal" on trips where the results are not all that might be expected, when the coal is of excellent quality, but either fine in size, or wet. In other words, when slack coal is supplied for hand-firing purposes, the firemen usually complain of "poor coal."

Several of the first large applications of mechanical stokers to locomotives were made on the Chesapeake & Ohio, Norfolk & Western, Baltimore & Ohio, and Chicago, Burlington & Quincy, where slack coal was available for locomotive fuel but had not formerly been used for that purpose on account of the objections of the firemen to the use of slack coal for hand-firing. At the time of the first application of the stokers there was a sufficient difference between the price of slack coal and lump coal used for hand-firing to make up for any difference in economy which comes from the use of slack coal under the varying conditions of locomotive firing. At the present time, however, with the present fuel shortage, there is not the economy in the use of slack coal that existed at the time when mechanical stokers were first applied for the purpose of using slack coal. It remains true, however, that in the districts where low-grade fuel is used, especially in the lignite and semi-lignite districts where the B.t.u.'s. are often as low as 9,500 and the amount of ash is as high as 21 per cent, it has been found possible to use coal for locomotive fuel, by mechanically firing it, that would not otherwise be available for that purpose.

The use of the stoker makes it possible for the fireman to watch his fire and give time to the removal of the ashes, pay attention to the grates, and, of course, there being no limit to the amount of coal which can be supplied by the stoker, the extra amount of coal required on account of the low quality

*Abstract of a paper presented at the annual meeting of the Smoke Prevention Association, August 22, 1918.

does not bring hardship upon the fireman, as would be the case with hand-firing.

Within the past three or four weeks a large number of mechanical stokers have been put in service on the Atchison, Topeka & Santa Fe, where all locomotives had formerly been hand-fired, and the question came up immediately as to whether slack coal could be used when the ordinary coal used for hand-firing was not immediately available; the following quotation, from a report of the mechanical expert instructing the enginemen in the use of the stoker, will be of interest:

The writer asked the roundhouse foreman for a tank of Frontenac slack, which was taken at Argentine. There was not a piece of coal as large as an apple on the tank. The firemen are complaining about this coal on hand-fired engines. It is almost impossible to keep a hand-fired engine hot with the slack coal. We did not have any trouble maintaining steam pressure. There was about 6 in. of fire on the grates on our arrival at Marceline. This fire could be cleaned in ten minutes. Mr. Petet, the fireman, did a creditable job of stoker firing. He was more than pleased to witness the operation of a machine that would feed slack coal to the firebox fast enough to maintain maximum steam pressure.

With further reference to the use of mechanical stokers in connection with low-grade coals for locomotive fuel, I beg leave to quote a few paragraphs from Technical Paper No. 80, issued by the Department of the Interior, Bureau of Mines, which particularly commends this method of firing which comes with the use of mechanical stokers, particularly of the over-feed type:

"Soft or bituminous coal should be fired in small quantities and at short intervals, the quantity that should be fired varying with the size of the grate and the intensity of the draft.

"Small and frequent firing makes the coal supply more nearly proportional to the air supply, which in most hand-fired furnaces is nearly constant. They also reduce the formation of crust on the fire and the chance of holes in the fuel bed. With small and frequent firings better combustion is obtained.

"When a fresh charge of bituminous coal is spread over an incandescent fuel bed, the coal is heated rapidly, and 20 to 40 per cent of the combustible matter is distilled off in the form of gases and tar vapors. This distilled combustible matter requires for its combustion additional air. It can be readily understood that the heavier the charges, the larger amount of volatile combustible driven off two to five minutes after firing.

"To burn the volatile combustible, about 15 times its weight of air needs to be supplied. Therefore, immediately after firing, a large quantity of air should be admitted over the fire, and this quantity should be gradually reduced as the distillation of the volatile combustible nears completion. The larger the quantity of fresh coal fired at a time, the larger the volume of air needed for the complete combustion of the volatile matter.

"An ideal case is the one in which the coal is fed into the furnace constantly and at a uniform rate, as is done with some mechanical stokers. The coal supply is then as uniform as the air supply."

In hand-firing, it is customary, of course, for the fireman to put in a fire, and while general instructions are given to fire frequently as being the best practice, all are familiar with the fact that it is common practice to fire several scoops of coal at a time, and then close the door for a few minutes until that quantity of coal is consumed. This saves the fireman from the heat incident to the constant opening of the firedoor and permits periods for rest and observation of signals.

The next consideration in importance in connection with the application of mechanical stokers has to do with the use of one fireman on locomotives of the size above mentioned as compared with the necessity for two, and in some cases three firemen on long distances. There has been much discussion between the firemen and the railroad companies during the past six or eight years as to the necessity of two

firemen or relief men on certain classes of locomotives, and while this has not had an important bearing upon the development of mechanical stokers for locomotives, it is one of the considerations, particularly in certain districts where large number of locomotives are used which would come well within the limits of size of locomotives on which the firemen have asked for assistance either on account of the low-grade fuel or the large size of the locomotives.

On the lines of one of the large railroads in the extreme Northwest both of these conditions existed. The coal available locally for locomotive fuel is of very low grade and high in ash content and the locomotives in ore service and over the mountains all exceed 60,000 lb. tractive effort. Many of these locomotives were put in oil-fired service for the relief of the firemen, and where oil was not available for locomotive fuel stokers have been applied to nearly 400 locomotives on this road, thus saving to the railroad the expense of relief men and making it possible to use low-grade local fuel.

The following quotation from another report of operation conditions illustrates a concrete case of what is accomplished in this direction by the application of stokers:

"We were pushing a Frisco Santa Fe engine. This engine hasn't any stoker and had two firemen out of Princeton to Elmore, and got two relief firemen out of Elmore to top of Spark Gap Mountain, making this engine cost \$14 for the trip of 70 miles. If it had been stoker-fired, it would cost \$3.50 for the 70 miles and the overtime after eight hours, so you can see the cost of the large, hand-fired locomotives."

The division in this instance was of such length that not only was one relief fireman necessary on this particular locomotive but two were required before the end of the division was reached. Of course this is an extreme condition and I only quote from it to illustrate that phase of the stoker proposition.

Another important feature in favor of stoker-fired locomotives is that they carry a much thinner fire than hand-fired locomotives. This contributes to better combustion, for the reason that air supply will more readily reach the firebox through the grate openings, rather than through the door as in hand-firing, and the air will be heated more readily in going through the fire. This light fire also saves delay at terminals as less time is required to clean the fire.

The stoker must eventually also have the effect of inducing a better class of men to take up the locomotive firing trade, and at the present time it is noticeable that less extra men are required and less difficulty is experienced in hiring new men for firemen on divisions of railroads where mechanical stokers are in use than on hand-fired divisions. Certain railroad officers consider this phase of the stoker problem of very great importance.

Most of these considerations have to do with the smoke prevention problems, as when the firemen are able to give proper attention to the fire without physical exhaustion much can be accomplished in the matter of prevention of smoke.

The wide variation of coal consumption requirements of the locomotives have been the problems which have had to be met in connection with the development of mechanical stokers for locomotives. That these problems have been met must be apparent, as the United States Railroad Administration has ordered mechanical stokers for application to all locomotives now being built which have a tractive effort of 50,000 lb. or over, and mechanical coal passers have been ordered for the smaller locomotives.

Most of the members of the Smoke Prevention Association will come in contact with many of these locomotives, especially in connection with their operation within the city limits of our large cities, and I wish to state that during the past five or six years the smoke problems of such districts as the cities of Washington, Baltimore, Chicago, and other places, have been met by mechanically-fired locomotives in a very

satisfactory way. So far as the writer knows, there have been no fines imposed for excessive smoke on stoker-fired locomotives in any of these districts.

Stoker-fired locomotives were first withheld by the Baltimore & Ohio from the city limits of Washington because they used slack coal and there was a possibility of their making smoke; as the firemen became accustomed to handling these engines and carried a light fire, feeding a small amount of coal regularly, it was found that the stoker locomotives

could be used without violation of the smoke ordinances.

Mechanical stoking of locomotives raises the efficiency of the locomotive by increasing its earning power, raises the efficiency of labor, lessens the arduous physical labor and suffering of the fireman, and at the same time lifts the grade of his employment, and has great possibilities along the lines of the use of lower grade fuel. By the carrying of thinner fires much can be accomplished in the way of smoke prevention.

Meeting of the National Industrial Traffic League

How the Large Shippers of the Country Feel Toward the New Management of the Railroads

THE NATIONAL INDUSTRIAL TRAFFIC LEAGUE held its regular summer meeting at Hotel Lafayette, Buffalo, N. Y., on Thursday and Friday, August 29 and 30, with about 200 members in attendance. President G. M. Freer occupied the chair, and E. F. Lacey, assistant secretary of the League, served as secretary of the meeting. Luther M. Walter, assistant to the director of public service and accounting, United States Railroad Administration, was present, and the first business of the opening session was to listen to him while he explained the attitude of the Administration toward shippers and the multifarious problems of freight transportation, and answered questions put to him by the traffic men. He said that the prime objective of the Administration would be to disturb existing conditions and relations as little as possible. Nevertheless many practices have been changed fundamentally. Shippers could be assured that existing troubles were not falling wholly on their side of the fence; railroad men, too, have anxieties about the future.

The participation of shipping representatives in local committees of railroad freight officers has worked well thus far, and if it continues to afford satisfactory results the shippers can expect still further recognition. The railroad officers have received explicit instructions, sent out jointly by Mr. Prouty, director of public service, and Mr. Chambers, director of the Division of Traffic, and the public is to be taken fully into the confidence of the Administration. Frank conferences, animated by the spirit of give and take, will bring satisfactory results. Compromises may be necessary, sometimes; it is a duty to take up all controversies in a broad spirit.

Protests against excessive or unreasonable freight rates will be taken before Director Prouty. Every one presenting a protest should take care to get intelligent and lucid local backing; that is to say, take care that the complaint is really representative. When a decision is reached at Washington concerning any change in freight rates it is proposed that it shall be made public, promptly, in such a way that all interested shall be fully informed. A citizen may go to a freight committee in his own locality even if his grievance is in a distant state. The local committee will communicate with the remote committee, as may be necessary; and it may comment on the grievance or complaint if its opinion is pertinent. Claims for reparation will probably be referred in all cases to the Interstate Commerce Commission.

Local committees will, in no case, make final decisions as to rates; and their decisions will not be sent to Washington without first having been fully considered in conference with shipping representatives.

Demurrage Problems

Rule 6 of the demurrage code was the first committee topic taken up for discussion. This rule imposes a charge on cars

received from switching lines and delayed because delivered without billing. Complaint has been made that cars loaded and sent out after 6 o'clock at night are penalized by this rule, after 7 o'clock the next morning, the trouble being that the railroad had no office open to receive the shipping instructions. The meeting approved the suggestion of the committee that the government be asked to extend the free time, in cases like this, until noon of the next day.

The League also approved the recommendation of the committee that carriers be asked to send arrival notices by first-class mail, which now is no more expensive than postal cards, the rate being two cents alike on sealed letters and on postal cards. A principal reason for the recommendation is that first-class mail, if misdirected, will be returned to the sender, which is not the case with postal cards.

Considering certain claims of inequitable operation of the rule for modifying demurrage charges when cars are bunched on the road and come in too fast for the consignee, the meeting approved the proposition that claims on account of bunching ought to be received by the carrier within 30 days, not 15 days as at present, and that the same time should be allowed in the presentation of claims for refund on account of weather interference.

Recent changes in the regulations for the application of the average agreement in the assessment of demurrage charges were briefly discussed. Heretofore, the proprietor of a grain elevator could make such an agreement covering all cars coming into his elevator regardless of the name to which such cars might be consigned, but the rules as they now stand have substituted the word "consignee" in place of the word "receiver" so that it is questionable whether the proprietor of an elevator could make an agreement binding on consignees sending cars there (addressed to themselves) and desiring that they be not included in the average agreement. It was voted, as the sense of the League, that the receiver of the cars, that is, the proprietor of the elevator, should be allowed to enter into such an agreement on behalf of shipments addressed to various consignees; and to do so in behalf of all shippers or consignees patronizing his elevator, or only a part of them. The view was expressed that possibly the average agreement is not a desirable thing at grain elevators; but it was pointed out that without this the independent elevator is discriminated against by elevators owned by railroad companies at which no demurrage regulations apply.

Conditions in the Express Business

The report of the committee on express traffic dealt with a dozen different subjects, but mostly in the way of information only. A complaint that the express companies would not absorb switching charges on a shipment which constituted a carload, and which was destined to a plant just outside the

regular wagon-delivery limits, was discussed by the meeting at some length, but the consignee was told in effect that he would have to make his own fight. Each such case must be decided on its merits; and it is not likely that the Interstate Commerce Commission would require an express company to deliver goods outside its regular and reasonable territorial limits. As to the recent general increase in express rates the only consolation offered was that probably another increase would be made before long.

Delays in settlement of claims against the express companies continue to be a cause of grievance, but no better advice was forthcoming than that each claimant should press his claim, especially if it be an old one, keeping it persistently before the highest officers of the carriers.

In the discussion of difficulties in tracing express shipments, and particularly where it is desired to trace by telegraph, the fact came out that express offices in New York city are now forwarding packages without any waybill except that which is pasted to the package. Records of the passage of shipments through junction or transfer points appear to have been entirely abandoned.

Shippers who have complained of the rules of the express companies in regard to packing freight have been told by the Administration that a thorough revision of these rules is now being made and that the changes will probably soon be laid before the Interstate Commerce Commission for approval. It was voted that the committee co-operate with the express companies in this matter and also ask the Interstate Commerce Commission to give a hearing on the subject.

Sale of Unclaimed Freight

The Freight Claims Committee reported on general order No. 34, of the director general, ordering the sale of non-perishable freight, refused or unclaimed, when it has been on hand sixty days. No provision is made for notifying the consignor, although a clause in the uniform code of storage rules requires notice to be sent if the shipment is plainly marked with the sender's name. It was resolved that when freight is refused, the shipper ought to be notified at once, and where unclaimed the notice should be sent 15 days after arrival and notice to consignee; and the committee was instructed to endeavor to have this change made. In the new classification used by the express companies there is a specific requirement that when freight is refused, the consignor, if known, shall be notified at once; and this classification has been approved by the Interstate Commerce Commission.

Concealed Loss and Damage

The Railroad Administration has made, or is preparing, a rule cutting off all claims for concealed damage. A letter on the subject was sent out from Washington some time since, and freight claim agents have already stiffened up and are looking with increased disfavor on all claims for concealed loss or damage. It was voted that a committee should at once seek a conference with the Railroad Administration, with a view to securing the adoption of reasonable and just rules for dealing with claims of this character; and the committee was also instructed to take up the question of claims for losses of coal, coke, ore and live stock; or, if the executive committee should find it desirable, separate committees will be appointed for each class of claims.

A number of members spoke of the large number of claims now pending, aggregating many thousands of dollars in amount; and emphasized the importance of urging the Railroad Administration to take action.

Double Carloads; Freight Office Practices

The car service section of the Railroad Administration has issued instructions concerning the loading of two carload lots in a single car, and the League has circulated these instruc-

tions; but the executive committee now recommends that the restrictions as to loading, in the same car, two loads for points not on the same line, should be modified; so that a shipment off the direct line may be put into the same car with another provided the detour does not take the car aside more than 15 per cent of the total distance, with a maximum side trip of 50 miles. This recommendation the League adopted.

The establishment of service bureaus to take the place of the off-line freight offices formerly maintained, was discussed by a number of members. The fact was brought out that such bureaus are already in operation at Kansas City, and at San Francisco. At Chicago it is expected that local agents will, in some cases, represent roads which formerly had no representation in Chicago. At Kansas City the working of the scheme is not yet entirely satisfactory, and the shippers are proposing to ask that the initial carrier be made responsible in the matter of giving rates, etc., as if it were actually an agent of the remote road. Shippers in Chicago and elsewhere will recommend that uniformity in representation be maintained, as far as practicable; for example, if the Boston & Maine is represented by a certain road in Chicago, it is desirable that it be represented by the same road in St. Louis.

Whether or not the Administration will establish these Information Bureaus at all places where, heretofore, foreign lines have had representation is not yet certain. In Chicago the Pennsylvania, the New York Central, and the New York, Chicago & St. Louis, maintain efficient information bureaus, and shippers desiring information get satisfactory service; and it was voted that the government be asked to inaugurate similar satisfactory service everywhere.

General Order No. 25 of the Railroad Administration requiring payment of freight charges on delivery of goods was briefly discussed. The committee suggested that any member having a grievance in this connection should present it fully at the next meeting of the League. In Chicago many business men look unfavorably on the proposal for a consolidated collection bureau. It was finally voted that a circular be sent to all members of the League calling for their experiences during the month of September; and that the information thus obtained be summarized and sent to the Division of Public Service.

The general advance in freight rates has been under consideration by the traffic bureaus in all of the principal cities for several weeks past, many inequalities in tariffs having been discovered, calling for conference between the railroads and shippers. H. C. Barlow, representing Chicago shippers, and J. C. Lincoln, representing those of New York City, have spent nearly the whole of their time for many days on these committees. Mr. Barlow reported that thus far the recommendations of the conferees at Chicago have been approved in Washington. The railroad officers are as keen as any shipper to correct all inequalities and hardships. Members of the League having grievances should formulate them and make them known.

Bills of Lading

The report of the committee on bills-of-lading disclosed that the recent ruling that the legend "United States Railroad Administration," etc., should be printed or stamped on every bill-of-lading, had resulted in a good deal of friction at many places. The Administration seems to have issued its order without full appreciation of the fact that in many cases a large shipper desires to print a single form of bill for use in sending freight over a dozen different railroads; and, according to the strict letter of the regulations, as at present interpreted, this would require him to have a dozen different rubber stamps. One member complained loudly because the Administration leaves each railroad to exercise its own judgment in matters of this kind; he would have more specific regulations formulated in Washington. Another member suggested that in view of the number and variety of rubber

stamps now required by the freight department, it would be well for the government to take over and operate all rubber stamp factories in the country. A committee was instructed to take up the matter with the Administration at Washington.

Side Track Agreements

The report of the special committee on railroad leases and side track agreements was briefly discussed. In March last, the League had taken action looking to the presentation of arguments before the Interstate Commerce Commission, but before anything was done the Railroad Administration took up the matter; and the Division of Operation and the Division of Law have now promised that a fair clause shall be adopted. Director Prouty of the Division of Public Service has proposed that in handling claims for personal injuries, the lessor (the railroad) shall be liable fully to the lessee, and the lessee liable fully to the lessor, each for damage to the one caused by the other; but the lessee shall be liable for damage to property of third parties except where the lessor is plainly at fault. This was approved by the League in 1916, and the same is now reaffirmed.

Miscellaneous Matters

There was a brief discussion of complaints that joint freight rates, in which a road not under government control is interested, are now inequitable, in many cases, because of the recent general change in tariffs; and the president was instructed to at once present these complaints to the Administration at Washington.

On recommendation of the freight claims committee, it was voted that the director of public service be requested to instruct all carriers that it is their duty to sign bills-of-lading bearing a notation that damages will result from unreasonable delay. Claims for damages on account of unreasonable delay have been refused on the ground that the carrier had no notice that unreasonable delay would cause damage.

At Youngstown, Ohio, and presumably at other places, it is proposed to consolidate freight houses and to arrange that all l.c.l. freight, for example, destined to Cleveland, be sent over one road; this in lieu of having sailing days on the several roads. It was brought out that in a case of this kind the consignee might have special reasons for favoring one road, and objection to another; and that, therefore, consignees should have a chance to make their wishes known before the adoption of such a scheme.

The policy of the post office department in adjusting claims for loss and damage in the parcel department came in for some criticism. It was voted that the post office department should be asked to apply in this department the same principle as that in vogue among common carriers.

The Division of Traffic has promised to simplify tariffs for extra baggage, especially those for transportation over two or more roads.

The president announced that, at the request of the Shipping Board, he had appointed a committee of fourteen on merchant marine. The chairman of this committee is J. C. Lincoln, manager of the traffic bureau of the Merchants' Association, New York City.

Among the visitors present at this convention was James E. Walsh, of Toronto, representative of the Canadian Manufacturers' Association, who, being invited to speak, presented the greetings of his constituents and expressed his appreciation of the value of the League. The Canadian government has virtually taken control of the Canadian Northern and the Grand Trunk Pacific, and there is a considerable sentiment toward taking over other roads. Mr. Walsh thought, from what he had heard in the two days of the meeting, that the merchants and manufacturers of the United States would not have much to say in favor of government operation.

On motion of F. B. Montgomery, manager of the traffic department of the International Harvester Company, it was

voted that the president of the League should write to Director General McAdoo, setting forth the desirability of appointing a representative of the shippers of the country as a member of his advisory board; for only a person familiar by experience with the merchants' and manufacturers' side of freight traffic problems can be sufficiently versed in details properly to present that side of many important questions.

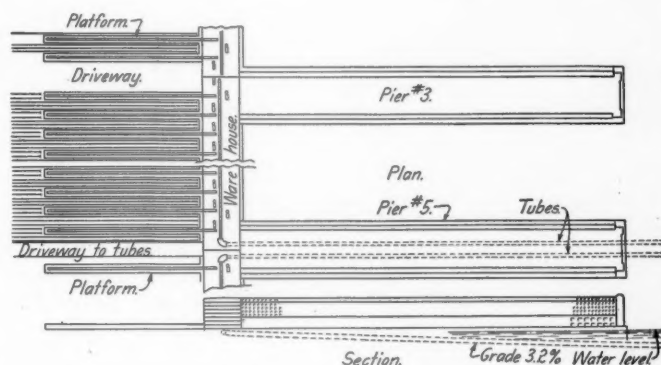
The annual meeting of the League is to be held at Cincinnati in November.

Conveyor Scheme for Handling New York City's Package Freight

THE CONSTRUCTION OF THREE TUNNELS under the Hudson river between the railway terminals in Jersey City and Manhattan Island for vehicular traffic with provision for two conveyors on each side of each tube to transport l.c.l. freight, is the latest solution proposed for the package freight handling problem of New York City. This plan was described at a meeting of the American Society of Terminal Engineers in New York on May 21, by M. A. Long, assistant to the chief engineer of the Baltimore & Ohio. The essential details of this novel plan, as outlined by Mr. Long, are contained in the following abstract of his paper.

The tunnels should be designed for the use of vehicles of all kinds. In order to allow gasoline motors to be used, ventilating fans could be placed in the tunnels on each side of the river. These fans would be connected to ducts placed in the ceiling and side walls.

The tunnels should be so designed that there would be space for two conveyors approximately 10 ft. high and 10 ft. wide on each side to carry package freight between Jersey City and Manhattan. These conveyors would be run in either direction in taking freight from Jersey to New York and from New York to Jersey. Any package too large or too



Enlarged Plan of the Pier and Warehouse Units

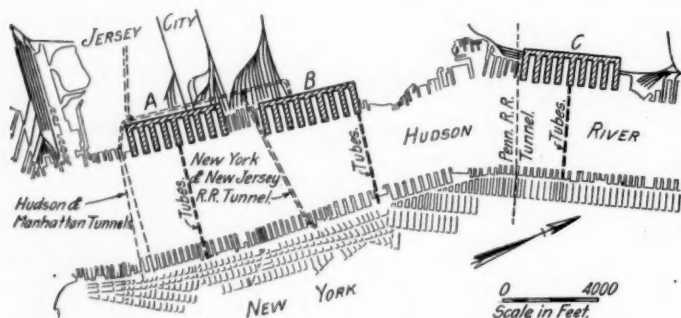
heavy for the conveyors would be hauled through the tunnel by trucks or teams.

Ninety per cent of the package freight destined to and from New York could be handled by the conveyors. They can be designed to carry a load equivalent to that usually placed on warehouse floors and they should be built in sections with individual drives to each and with a master control for all, the package tunnel to be patrolled while in operation. Each conveyor will carry approximately 1,250 tons per hour, four conveyors per tunnel, therefore, would carry 2,500 car loads in 10 hrs., figuring 20 tons per car. Based on this capacity, three conveyors, which is one less than the capacity of one tunnel, could handle more than the present estimated daily package tonnage to and from New York City while the total scheme will provide a capacity equal to four times that amount based on a working day of ten hours.

Working two shifts, eight times the present tonnage could be handled.

The layout on the Jersey side should include a system of warehouses parallel with the river; receiving platforms at the rear and at right angles to the warehouses could be fitted with conveyors to handle the freight from cars to warehouses or piers and to feed the main conveyors in the tunnel. The export piers will be located in front of and at right angles to the warehouses. In constructing the tunnels a pier will be built with them in such a manner that it will span the tunnel and provide the necessary space in which the tunnel can rise to the ground surface; and in this manner no river frontage would be sacrificed.

It has not been the custom to build warehouses over piers, but there is no reason why we should not do so when the foundations rest on rock or hard pan. The additional expense necessary to provide foundations to support an eight or ten-story warehouse will be no greater here than on any of the adjacent lots on shore, where the initial foundation for the pier is considered. Therefore, the scheme has been developed to show warehouses over the piers; these warehouses to be built narrower than the pier proper to allow room for ships' tackle; the platform alongside the piers to be separate



Suggested Location of the Terminal Warehouses and Tubes

from and yet a part of the pier. The platforms will be built of timber so designed that they will act as fenders for the main structure and take the initial shock.

This same scheme should be carried out on the New York side of the river, except for the long receiving platforms. These would not be necessary as the plan eliminates the necessity for freight tracks and freight cars in New York City. The conveyors could run to warehouses on the East side of West street or similar streets and teams would make delivery from these warehouses. This would allow New York City to develop its water front to the limit for export freight. It is not likely that any passenger subway will be built in West street and a freight subway could be built north and south on this street and the Marginal Way, fitted with conveyors to handle package freight to be delivered to any warehouse along the city side of the Marginal Way.

Branches could be run from these tunnels to steamship piers, so that package freight could be delivered to them by branch conveyors. The storage of the cargo in a warehouse alongside or adjacent to the slip at which a particular vessel is to dock, would permit that vessel to load and depart in much less time than it takes at present. In this scheme package freight to and from New York could be delivered to any of the warehouses or piers described in New York or New Jersey without having to appear on the surface of the Hudson river or on the crowded streets of New York City.

All conveyors should be reversible and outbound packages would be taken to cars in the same manner in which they are taken from them. The floor or carrying capacity of the conveyor is to be of a special design, which I have originated. It can be trucked over obliquely while in motion and, in the event of a temporary breakdown, electric tractors and trailers

can be put into use and can travel over it as easily as they can be operated on a floor; it is designed to be placed in the floor of warehouses and is so constructed that it will not interfere with the headroom on the floor beneath and it will not mean any particularly special design of floor construction; it will eliminate practically 90 per cent of the trucking in handling goods in and out of warehouses.

This scheme is particularly attractive because it can be built without disturbing the present method of operation; each railroad will still maintain its own property and can either own a conveyor for the delivery of freight in New York or can own one jointly with another friendly line with a tonnage agreement for handling, or some similar arrangement; it will allow New York City to develop to the limit its export and import business since no local package freight would be handled at the river front; it will take most of the car floats off of the Hudson river; ice and fog will in no way hinder or delay the receiving or delivering of the daily tonnage; the cost per ton for handling will be lower than in any other scheme I have seen and it will require less manual labor; instead of handling all business through one point it provides 12 different centers for handling; it can be enlarged to suit any expansion in business; and by constructing warehouses to hold the tonnage now held in cars in the New York and Jersey yards, about 20,000 cars will be released.

Each tunnel will cost from \$18,000,000 to \$20,000,000.

Forged Return Bends for Superheater Units

THE LOCOMOTIVE SUPERHEATER COMPANY, New York, a short time ago perfected a process of forging or swaging the return bends on superheater units from the unit pipes without the use of any form of autogenous welding. The steps in the process are shown in the illustration. The first step splits and machine-welds the ends of the pipes together and is carried on in a forging machine. The next step forms what is known as a preliminary swage



Steps in the Process of Forming the Forged Return Bends in Superheater Units

and the return bend is then placed in a special swaging or forging machine and the completed bend is formed. The final step consists of cutting off the short extended butt, pressing the return bend back into shape so that there is no greater thickness than the outside diameter of the pipe, and smoothing the end off with an air hammer. The cut sections show the character of the completed return bends. As previously stated, there is no oxy-acetylene or electric welding used, the entire process being a machine forging job. These return bends are formed on the long pipes of the units and not on short ones as shown in the illustration, these short pipes being employed merely for the purpose of illustrating the process. Each unit thus becomes a continuous pipe from the saturated to the superheated steam chambers of the header.

General News Department

Director General McAdoo is preparing to issue an order prohibiting the garnisheeing of wages of railroad employees.

The American Association of Passenger Traffic Officers will hold its annual meeting at Baltimore, Md., on October 23 and 24, instead of on the earlier date heretofore announced.

The freight house of the Chesapeake & Ohio, at Newport News, Va., was destroyed by fire on August 23; estimated loss \$50,000. A new freight house, adjacent to the building destroyed, was saved.

The employees of the Interborough Rapid Transit Company, New York City, have been granted a general increase in pay, said to average \$1 per day per capita. The aggregate estimated increase in the payrolls is about \$3,000,000.

Pennsylvania Railroad employees now on active duty in the military or naval service of the United States number 20,193; 14,085 men from the lines east of Pittsburgh, and 6,108 from the western lines. In March last the total was 11,769.

The Chesapeake & Ohio has engaged the State Public Service Utility Audit & Investigating Company of Charleston, West Virginia, W. J. Bienemann, president, to make the separation of its accounts as between federal and corporate interests.

The track from Hagerstown, Md., to Security is not to be torn up. The announcement to this effect was premature. W. H. Angle, the contractor for the work, had drawn the spikes of two miles of track when he received an order to suspend operations.

The Master Car Builders' rules of interchange, as revised June, 1917, have been extended to remain in effect until further notice. This announcement is made in circular No. 14 issued August 26. The extension applies also to circulars interpreting or modifying the 1917 rules. Notice will be given in advance of the date on which the 1918 code of rules is to go into effect.

Two Chicago ticket scalpers caught by H. A. Koch, inspector of passenger traffic of the Railroad Administration, in charge of the investigation and prosecution of scalpers, have been arrested and now await trial. They are David Lyons and Harry W. Young. They are charged with altering railroad tickets purchased at their places of business and thereby conspiring to defraud the government.

Studies are being made by the United States Railroad Administration to determine whether the adoption of an equitable and universal plan for the compensation of employees, in case of death or injury, and provision of life, health and old age insurance is practicable. There are difficulties in the way arising from the existence of the present pension and insurance plans, but it is expected that they can be overcome.

The National Association of Purchasing Agents will hold its third annual convention at Hotel Pontchartrain, Detroit, Mich., on September 23, 24 and 25. Attendance at the convention is not limited to members of the association, an open invitation being extended to purchasing agents in all industries and in all sections of the country. The president of the association is E. L. McGrew, president of the Underground Cable Company, Pittsburgh, Pa., and the secretary is L. F. Boffey, 25 Beaver street, New York City.

Every patriot must produce cross ties; or, if he is not a farmer or owner of timber land, he must do what he can to aid in the production of ties by others. This is the gist of a circular which has been issued by F. H. Fechtig, purchasing agent of the Atlantic Coast Line Railroad, which he is circulating in the territory adjacent to his road. The circular contains the specification for ties as approved by the Railroad Administration, and appeals to the farmer, the tie chop-

per, the section foremen, tie inspectors, station agents and everybody who can influence a farmer, or aid the company in its quest for largely increased quantities of ties.

A strike of trainmen on the Denver & Salt Lake which commenced on August 21, was terminated on the 25th only after it was announced that the government had taken over the road. The men demanded back wages which they claimed were due them under the Adamson law and also the wage increase granted to roads under governmental control in General Order No. 27, dating back to the first of last January. The government has agreed to give the men their back pay under General Order No. 27. As to the Adamson law wages which have been the subject of litigation—when the amount due the men is settled by the court and receiver's certificates issued therefor, the government will cash the certificates so that the money may be paid to the men.

Successful Airplane Mail Service

The Post Office Department reports that during the month of August the airplanes made their trips between New York and Washington without any serious delay. The aerial carriers flew on 27 days, and there were only two forced landings, one causing a delay of 7 minutes, and the other 10 minutes. One of these accidents, caused by the breaking of a magneto shaft, occurred within four miles of the New York terminus at Belmont Park; and except for this four miles, the whole mileage for the month, 11,961 miles was accomplished. A total of 5,879 lb. of mail was carried in August. No airplane had to be laid up in the shop for repairs during the month.

Inventory of Steel Stocks

A country-wide inventory of stocks of steel on hand is being made by the War Industries Board in co-operation with the Census Bureau. The present estimated total production of steel in sight is 17,000,000 tons, while the war demands aggregate over 23,000,000 tons, with the demand constantly rising. Chairman Baruch announces that he cannot approve requests for an ounce of steel for domestic uses. The Census Bureau is sending questionnaires to more than 40,000 manufacturers asking complete reports of stocks of steel on hand down to the smallest holdings. It is sought to reach every manufacturer who uses steel in any way and in any amount.

Pennsylvania Railroad Pensions

The list of Pennsylvania employees retired on pension on July 1, which has just been issued, contains the names of 63 men, and one woman, 51 of the 64 being on the Eastern lines, and the others on the Western. Seven employees had worked more than a half century each. Four officers are included in the list, namely, A. B. Starr, special assistant to the vice-president in charge of operation, Pittsburgh; Daniel T. McCabe, vice-president in charge of traffic, Pittsburgh; Samuel Moody, passenger traffic manager, Pittsburgh, and Joseph A. Clift, chief accountant in the department of the auditor of freight traffic, Philadelphia. The one woman, Miss Bridget E. Whalen, was telegraph operator at Collier, W. Va., where she had served without a break from July 26, 1868, or 26 days less than half a century. The company's circular includes a portrait and sketch of Miss Whalen, along with those of other prominent pensioners, and says that she was regarded as one of the best train-order operators in the country. She was a person who commanded marked esteem among her neighbors, and no man, however rough, came into her presence without showing her the highest respect. Her acts of charity in the community where she resided were proverbial, and the extent of her charitable work is indicated by the statement that although she had received fair remuneration for her services for 50 years she is now dependent upon her pension allowance for a livelihood.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY, 1918

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decrease) comp. with last year.
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structures.	Equip. ment.	Traffic.					
Alabama Great Southern.....	312	\$587,047	\$213,647	\$800,694	\$191,527	\$12,791	\$297,826	68.41	\$267,668	\$21,269	\$245,207	\$43,748
Arizona Eastern.....	377	341,815	398,837	740,652	110,574	95,052	102,046	84.10	635,411	15,179	47,956	84,818
Archison, Topeka & Santa Fe.....	8,646	10,255,068	3,833,117	14,088,185	1,431,290	2,126,188	4,316,307	55.09	6,889,789	570,977	6,116,232	1,914,023
Atlantic Coast Line.....	93	108,984	86,259	195,243	20,292	36,188	70,819	63.37	80,710	8,400	72,307	41,834
Atlantic Coast Line.....	4,841	3,144,381	1,533,168	4,677,549	564,511	933,679	1,878,225	73.02	1,309,724	225,000	1,084,298	655,127
Baltimore & Ohio.....	4,948	12,931,519	3,148,446	16,079,965	2,111,006	3,585,225	6,468,225	71.36	5,025,276	440,980	4,579,650	1,856,477
Boston & Maine.....	208	1,657,759	75,289	1,733,048	75,453	264,990	91,860	43.67	968,612	37,898	930,713	298,339
Boston & Maine.....	2,305	4,252,767	1,997,247	6,250,014	946,065	1,121,157	2,969,576	76.62	1,613,194	168,729	1,444,464	289,209
Buffalo, Rochester & Pittsburgh.....	584	1,660,152	128,152	1,788,304	270,509	511,693	674,434	80.86	356,169	26,734	329,435	18,363
Carolina, Clinchfield & Ohio.....	282	386,482	48,423	434,905	52,327	131,581	136,230	77.62	98,838	14,800	84,038	14,051
Central of Georgia.....	1,918	1,101,133	555,132	1,656,265	252,379	278,439	32,234	71.84	497,125	65,205	436,856	98,237
Central New England.....	301	577,240	24,231	601,471	94,395	73,524	281,583	72.85	170,824	17,800	153,017	17,444
Central Vermont.....	411	343,840	77,000	420,840	62,250	101,701	240,170	90.11	46,271	18,300	27,967	33,930
Charleston & Western Carolina.....	342	156,624	63,149	219,773	43,521	34,710	98,239	78.58	49,823	9,000	40,823	11,556
Chesapeake & Ohio Lines.....	2,279	5,194,094	1,427,755	6,621,849	697,839	1,430,072	2,609,916	63.48	2,407,243	173,184	2,234,059	1,201,001
Chicago & Alton.....	1,050	1,699,105	536,352	2,235,457	253,582	371,853	839,256	64.83	831,018	58,195	772,649	233,425
Chicago & Erie.....	269	908,327	24,736	933,063	101,158	157,373	438,379	77.18	230,833	36,608	194,224	21,560
Chicago & North Western.....	8,094	9,916,019	2,904,842	12,820,861	1,638,564	2,094,152	4,504,412	65.90	4,394,857	420,000	3,972,697	1,643,555
Chicago, Burlington & Quincy.....	9,373	9,600,588	2,766,743	12,367,331	1,589,827	2,092,698	4,209,508	64.41	4,441,298	697,260	4,044,038	1,355,402
Chicago, Great Western.....	1,496	1,064,162	530,300	1,594,462	291,025	383,002	649,256	82.06	307,276	54,975	252,301	39,782
Chicago, Indianapolis & Louisville.....	657	741,720	263,079	1,004,799	98,956	398,956	416,997	87.66	134,189	31,387	102,770	72,776
Chicago, Milwaukee & St. Paul.....	12	8,180,273	2,665,592	10,845,865	1,905,495	2,713,960	4,821,189	90.52	31,195	514,555	2,233,658	401,531
Chicago, Rock Island & Pacific.....	474	213,538	87,988	301,526	51,928	53,965	125,725	77.52	72,586	13,155	59,386	21,837
Chicago, St. Paul, Minn. & Omaha.....	7,823	5,825,925	2,574,997	8,400,922	887,568	1,278,392	3,294,817	97.04	2,622,234	350,252	1,911,615	623,447
Chicago, Terre Haute & Southwestern.....	1,749	1,513,351	554,651	2,068,002	268,075	351,477	857,617	67.45	752,494	111,324	641,169	206,946
Cincinnati, New Orleans & Tex. Pacific.....	374	918,045	433,741	1,351,786	149,028	134,630	3,908	64.42	197,530	14,500	183,030	95,243
Cincinnati, Northern.....	337	918,045	433,741	1,351,786	149,028	134,630	3,908	70.54	428,134	38,719	389,415	24,493
Cincinnati, Northern.....	245	918,045	433,741	1,351,786	149,028	134,630	3,908	70.54	428,134	38,719	389,415	24,493
Cleveland, Cincinnati, Chic. & St. Louis.....	2,395	5,011,470	1,606,999	6,618,469	601,321	1,090,790	2,228,120	58.15	2,964,215	173,560	2,789,524	1,637,421
Coal & Coke.....	197	94,804	23,203	118,007	87,145	50,987	72,438	164.02	94,261	5,000	99,261	116,277
Colorado & Southern.....	1,100	797,774	190,885	988,659	135,723	246,356	335,596	73.46	277,621	47,000	230,539	82,702
Cumberland & Valley.....	163	429,537	69,489	499,026	44,816	74,990	171,592	58.03	223,129	9,466	210,126	9,764
Delaware & Hudson Co.—R. Dept.....	878	2,902,461	270,303	3,172,764	342,364	334,144	1,341,550	72.29	923,856	71,768	851,840	178,214
Delaware, Lackawanna & Western.....	955	4,738,965	1,070,070	5,809,035	644,132	1,006,974	2,266,764	59.95	2,581,940	234,661	2,346,475	813,860
Denver & Rio Grande.....	2,610	1,884,079	474,982	2,359,061	246,227	466,738	813,305	81.13	461,598	10,500	356,577	153,409
Denver & Salt Lake.....	255	216,383	37,676	254,059	75,388	59,293	107,966	95.53	11,619	9,020	2,591	158,337
Duluth, Missabe & Northern.....	410	3,771,102	43,555	3,814,657	186,563	136,527	494,443	21.75	3,111,251	218,584	2,892,667	1,558,337
El Paso & Southwestern Co.....	1,028	1,028,436	196,474	1,224,910	105,206	204,040	334,399	55.26	568,173	50,986	517,179	82,249
Erie.....	1,989	6,258,442	1,031,258	7,289,700	1,037,478	2,370,601	5,408,553	90.30	771,038	236,897	534,037	487,399
Florida East Coast.....	764	359,772	159,164	518,936	92,989	118,827	300,080	86.07	91,906	41,335	40,571	29,516
Ft. Worth & Denver City.....	454	400,799	169,629	570,428	61,897	137,769	236,158	72.72	159,820	21,440	138,380	45,082
Ft. Worth & Denver City.....	88	32,621	60,692	93,313	8,639	8,791	35,079	62.08	37,144	4,500	32,644	7,059
Galveston, Harrisburg & San Antonio.....	1,360	1,288,303	437,647	1,725,950	203,590	225,669	543,841	57.94	768,235	56,741	711,209	238,410
Georgia.....	328	376,166	230,954	607,120	634,562	33,441	175,532	43.66	357,462	5,950	351,513	287,959
Great Northern.....	8,260	7,246,545	1,533,501	8,780,046	1,369,237	1,307,429	3,316,519	67.26	3,038,521	499,337	2,538,626	110,860
Gulf, Colorado & Santa Fe.....	1,937	956,444	505,261	1,461,705	277,118	220,772	482,586	66.14	531,371	69,646	460,988	44,484
Hocking Valley.....	349	1,362,033	199,688	1,561,721	127,881	289,540	436,887	57.42	659,003	54,025	604,978	234,450
Houston & Texas Central.....	948	490,430	199,688	690,118	83,716	83,716	279,389	66.97	241,799	35,840	205,881	32,688
International & Great Northern.....	1,159	688,484	315,853	1,004,337	177,291	227,371	451,634	86.52	140,561	30,000	110,440	93,233
Lake Erie & Western.....	900	792,425	58,470	850,895	118,828	242,583	342,833	82.39	158,230	30,000	128,186	17,231
Lehigh Valley.....	1,442	5,419,461	759,618	6,179,079	716,304	1,400,583	4,276,926	72.11	1,876,986	161,471	1,715,481	409,631
Long Island.....	398	549,719	1,953,961	2,503,680	326,845	326,845	1,838,356	53.37	1,274,962	89,871	1,184,989	368,240
Los Angeles & Salt Lake.....	1,168	881,402	358,397	1,239,799	149,148	229,933	412,418	63.61	483,128	62,565	420,563	98,203
Louisville & Nashville.....	4,996	6,841,347	2,380,607	9,221,954	1,151,633	1,818,714	3,191,625	67.57	3,065,437	238,186	2,825,804	1,085,272
Louisville, Henderson & St. Louis.....	199	150,000	73,000	223,000	37,406	25,682	73,409	63.75	84,084	3,767	80,313	23,295
Maine Central.....	1,216	1,045,312	503,401	1,548,713	213,046	259,909	785,541	78.00	370,719	67,461	303,239	37,870
Maryland, Delaware & Virginia Ry. Co.....	82	88,106	48,575	136,681	8,330	30,543	71,152	80.96	26,576	1,892	24,684	7,713
Michigan Central.....	1,861	4,007,911	1,900,310	5,908,221	621,336	969,978	2,127,080	61.59	2,477,546	168,700	2,308,396	1,208,133
Missouri, Oklahoma & Gulf.....	332	134,323	28,153	162,476	42,118	53,434	76,008	107.05	12,006	9,000	21,006	58,513
Missouri Pacific.....	7,301	5,335,300	1,868,434	7,203,734	1,261,138	1,397,586	2,838,333	75.11	1,922,739	283,332	1,639,448	238,999
Morgan's La. & Texas R. & S. Co.....	400	488,663	175,953	664,616	69,137	75,764	250,339	62.53	303,031	25,910	277,517	120,499
Nashville, Chattanooga & St. Louis.....	1,236	1,380,565	665,896	2,046,461	35,237	67,219	672,159	66.37	793,075	33,334	759,353	546,080
New Orleans Great Northern.....	284	171,267	45,053	216,320	43,882	30,298	58,491	62.59	84,506	8,141	76,365	21,762
New York Central.....	6,079	16,028,062	7,169,013	23,197,075	2,742,923	4,444,896	9,687,965	68.17	8,364,497	1,158,654	7,204,446	1,462,802
New York, Chicago & St. Louis.....	572	1,656,595	278,205	1,934,800	229,353	361,661	715,371	69.38	602,607	57,500	545,103	220,080
New York, New Haven & Hartford.....	2,007	5,370,343	3,701,439	9,071,782	1,210,689	1,468,250	3,673,142	65.61	3,075,748	282,000	2,793,158	1,207,269
Norfolk & Western.....	2,077	6,626,693	998,942	7,625,635	826,166	1,673,133	4,432,222	65.90	2,886,675	22,000	2,864,675	231,359
Norfolk Pacific.....	6,596	6,366,693	1,637,798	7,994,491	1,259,913	1,111,600	45,294	57.86	1,210,621	151,754	1,058,784	96,144
Oregon Short Line.....	2,328	2,187,302	503,807	2,691,109	344,516	377,410	792,867					

Results of M. C. B. and M. M. Letter Ballot

The outcome of the voting on questions ordered submitted to letter ballot at the annual meeting of the Master Car Builders' Association has been announced in Circular No. 7, issued by the secretary. All of the proposals submitted to a vote were carried. The most important matter considered was the adoption of the No. 10 contour line for the type D coupler. (See *Railway Age*, June 21, 1918, page 1501.) This was adopted with but a single dissenting vote. The design of the 6-in. by 8-in. shank for the type D coupler was also carried by a large majority. The gages to insure interchangeability of parts and specifications for the purchase and acceptance of couplers, knuckles, locks, and other parts were also adopted. The modifications of certain specifications proposed by the Committee on Tests and Specifications for Material were carried. (See *Railway Age*, June 21, 1918, page 1489.) It was also voted to add to the interchange rules a provision making the use of metal safety blocks mandatory and prohibiting the use of wooden safety blocks. The remainder of the twenty-two questions related to minor changes in the standards and recommended practices of the association.

The twenty questions appearing on the letter ballot of the Master Mechanics' Association were all adopted. The majority of these were submitted by the Committee on Specifications and Tests for Material. Several new specifications were adopted as recommended practice and a number of others were revised. (See *Railway Age*, June 21, 1918, page 1519.) The overall width of journal bearings was increased and several of the recommended practices of the association were advanced to standard. (See *Railway Age*, June 21, 1918, page 1524.)

New York City Ticket Offices

The new consolidated ticket offices in New York City, except the one at 31 West 32nd street, were opened for business on Tuesday, September 3. That on 32nd street will be opened on September 23, more than two months later than the time at which it was expected to open all of the offices.

The offices now opened are at 64 Broadway; Broadway and Chambers street; 114 West 42nd street, and 336 Fulton street (Brooklyn). The principal office is at 64 Broadway, where 57 men will be employed. Ten of these will serve at the Information Bureau. All of the offices together will employ about 200 men, which is 100 less than the number now employed in city offices; and 48 offices are to be abandoned, saving in rentals about \$290,000 yearly. A school is to be at once established to train young women in ticket selling. The course of instruction will occupy two months, or longer, and the pupils are to be paid while learning.

George A. Cullen, chairman of the committee in charge, issued a statement to the ticket sellers in which he said, in part: "Director General McAdoo has equipped you with the finest tools, but there are two things which he cannot supply. The first of these is the spirit of service. You will meet each day more people seeking important, accurate and vital information than, I believe, in any other organization in this great city.

"You can respond to this need in a careless and perfunctory way, doling out half-facts and guesses, or you can painstakingly ascertain what the inquirers want to know (indeed help them to find out as is so often necessary) and then give them clear, explicit and understandable answers—a joy to do. You can provide them with transportation and accommodations in a grudging and indifferent manner or do this with carefulness and alacrity and with consequent satisfaction to yourselves.

"The other feature that is wholly up to you is what for want of a better term I may call the spirit of civility. Civility is not a mask to be put on—a smile or an external assumption of politeness. To be of any lasting value in the day's work, the week's work, the year's work, it must come from an honest and whole hearted desire to put yourself in the other fellow's place. In a word, it is the constant practical application of the Golden Rule which in your work particularly is more essential than all the so-called rules and regulations our committee can possibly set down for your guidance. We want no slackers, no grouches among us."

Traffic News

Grain is now moving on the New York state barge canal, 30 boats having been loaded with wheat at one elevator, at Buffalo, last week. Four boats with pig iron left Buffalo on August 28 for Bridgeport, Conn.

Rate Reduction on Grain from Buffalo Eastward

The Division of Traffic of the Railroad Administration has authorized, effective September 1, to expire October 10, a reduction of 2 cents per 100 lb. in the ex-lake rates from Buffalo, N. Y., to eastern seaboard cities on grain from Lake Michigan ports. This adjustment seems necessary to attract the maximum amount of grain to the boats at Lake Michigan ports before the beginning of the movement of the northwestern crop through Lake Superior ports. The latter movement will require practically all the lake tonnage available; hence the necessity of making an extra effort to get grain which normally should move through the Chicago gateway.

The present rates will automatically be restored on October 11. Any grain to get the benefit of the lower rates must move out of the Buffalo elevators prior to October 11.

Coal Production

Recovery from the slump of the past five weeks marked the production of bituminous coal during the week ended August 24, according to the weekly bulletin of the United States Geological Survey. The output during that week, including lignite and coal made into coke, is estimated at 12,603,000 net tons and not only exceeded the production during the week preceding by 669,000 net tons, or 5.6 per cent, but exceeded the production during the preceding three weeks. Production during the current week of 1918 was 1,852,000 net tons, or 17 per cent in excess of the production during the corresponding week of 1917.

The average production per working day during the week of August 24 is estimated at 2,100,000 net tons, as against 1,989,000 net tons during the week preceding, and 1,792,000 net tons during the week of August 24, 1917.

Production of anthracite in the United States during the week of August 24 is estimated at 2,134,000 net tons, as against 1,924,000 net tons during the week preceding, an increase of 10.9 per cent, and as against 1,988,600 net tons during the corresponding week of 1917, or an increase of 7.3 per cent. The average daily production during the week of August 24 is estimated at 355,667 net tons, as against 336,839 net tons during the coal year to date, and as against 329,831 net tons during the same period of 1917.

Total production for the coal year to date is estimated at 41,768,000 net tons, an increase over 1917 of 869,000 net tons, or 2.1 per cent.

For the week ended August 17 the operators reporting produced 84.5 per cent of the total estimated output, the mines being operated at 77.7 per cent of their full time capacity. As during the preceding week, the report says, the limiting factor was car shortage, the operators reporting a loss of 12.4 per cent of full time from this cause and poor transportation conditions caused increased losses of time by the mines in Illinois, Somerset County, Pa., New River and Winding Gulf, and the high volatile districts of West Virginia and in northeast and western Kentucky. Improved supply of cars existed in western Pennsylvania, Cumberland-Piedmont district and in southwest Virginia.

According to the weekly report to Director General McAdoo by the Car Service Section of the Railroad Administration, 247,288 cars of coal of all kinds were loaded by railroads in the week ended August 17, as compared with 216,415 cars for the corresponding week in the previous year. A summary of reports for the week ended August 24 partly estimated shows a total of 264,305 cars, as compared with 228,029 in the corresponding week of the previous year. This would make the increase in 1918 up to and including August 24 over the same period of 1917 a total of 488,413 cars.

Commission and Court News

Interstate Commerce Commission

New Haven May Retain Steamer

Lines on Long Island Sound

Opinion by Commissioner Woolley.

The commission has handed down a decision granting the New York, New Haven & Hartford permission to continue the operation of the steamer lines on Long Island Sound controlled by the New England Navigation Company, the Hartford & New York Transportation Company and the New Bedford, Martha's Vineyard & Nantucket Steamboat Company, as it is found that under present conditions the services are being operated in the interest of the public and are of advantage to the commerce and convenience of the people and as continued operation by the railroad will neither prevent, exclude nor reduce competition on the route via water under consideration. Action in the future, however, will be dependent upon circumstances and conditions.

The commission's decision goes into great detail concerning the service operated by the steamboat companies and says that, all things considered, including the physical characteristics of the region and the direction in which early conditions caused the rail lines to be built, it is strongly of the opinion that economy and efficiency demand the greatest possible co-ordination between the petitioner's rail lines and steamer lines to New York, and that there is slight probability that this could be secured to as great an extent as at present under independent ownership and operation of the steamer lines. (50 I. C. C. 634.)

Colonial Navigation Company v. New York, New Haven & Hartford Railroad Company. Opinion by Commission Woolley.

The practice of the defendants in maintaining a through route for the transportation of passengers and baggage between New York and points on its lines, via Providence, R. I., in connection with the New England Steamship Company, which it controls through stock ownership, while refusing to establish a similar route with the complainant, is found to result in undue prejudice. The defendant is required to establish joint passenger fares in connection with complainant not higher than those contemporaneously maintained in connection with the New England Steamship Company. (50 I. C. C. 634.)

Court News

Dangerous Approach to Train

The Kentucky Court of Appeals holds that for breach of duty to furnish a passenger safe approach to the defendant's train, he having to cross two tracks in going from the station to the cars, the railroad is liable for his injury by the train of another railroad using the same station and coming on one of such tracks, without regard to which owned and controlled the station and tracks.—*Scott v. Cincinnati, N. O. & T. P., (Ky.)*, 203 S. W. 1064. Decided June 14, 1918.

Failure to Pay Tariff Rates Bars Recovery of Damages

A shipper of a carload of horses from Hot Springs, Ark., to Louisville, Ky., through a mistake of the agent, paid freight at less than tariff rate. On the arrival of the stock in Louisville, the L. & N. declined to permit it to be unloaded until the balance of the freight was paid. This was not done until next morning, and in consequence of the delay a horse contracted pneumonia, from which it died. In an action against the railroad it was held by the Kentucky Court of Appeals that, as a shipper is conclusively presumed to know the published rate, this man should have paid the additional amount demanded; and his failure to do so precluded recovery for damages resulting from the delay in unloading. The shipper had an agent present who had accompanied the horses. The fact, if it were a fact, that the agent did not have the money to make the payment at the time furnished no excuse. Plaintiff was presumed to know

that it would be unlawful for the shipment to be delivered to him or his agent without payment of the legal rate.—*Blackford v. St. Louis, I. M. & S. (Ky.)*, 203 S. W., 867. Decided June 11, 1918.

Persons Entitled to Recover Damages—

Apportionment of Damages Between Carriers

The Texas Court of Civil Appeals holds that the consignee of an intrastate shipment of cattle and another who did not buy an interest in the cattle until they reached their destination would have no right to recover against the carriers for cattle killed and injured in transit; the owner not having sold them an interest in the chose in action.

The contract of the initial carrier was to transport to a certain place, and there deliver to the connecting carrier. There was no partnership between the carriers or ratification of the original contract. It is held that where evidence wholly failed to show the damages which occurred on each line there was no basis for an apportionment of damages by the jury. Receiving from the initial carrier cattle for transportation was not a ratification of the initial carrier's contract, but merely a compliance with the state statute requiring a connecting carrier to receive and transport all freight delivered to it by any other line.—*Pouder v. Crenwelge (Tex.)* 203 S. W. 1125. Decided June 12, 1918.

Warning Devices at Crossings—Safety Signals

In an action by the driver of an automobile for personal injuries received when he collided with a freight train standing on a crossing the only negligence relied on was the failure of the automatic electric crossing gong to ring. The Massachusetts Supreme Judicial Court holds that even if this appliance were maintained by the railroad because required to do so by statute, its purpose was to protect travelers on the highway from the danger of approaching trains, and not to warn them against cars and engines which were standing still. A plaintiff cannot recover for the violation of a statute unless there is a causal connection between his injury and the condition to which the statute applies. The fact that the railroad voluntarily maintained the appliance without an order or request from the railroad commissioners did not show that it was intended to protect against standing cars. A failure to use a safety appliance, adopted as a protection against some particular danger, cannot be relied upon to prove negligence when the injury is caused by another danger which the appliance was not designed to guard against; and the responsibility voluntarily assumed to maintain these signals imposes no higher duty on a railroad company than the statute requires.—*W. Glaufflin v. Boston & Maine (Mass.)* 119 N. E. 955. Decided May 28, 1918.

Discrimination in Absorption of Switching Charges

At certain points south of Richmond three railroad companies, the Seaboard Air Line, the Southern and the Atlantic Coast Line, were competitors for traffic to and from that city. Each road had switching facilities at Richmond, connecting with each other, and each delivered freight from competitive points to industries on its own tracks in Richmond at its tariff rate to that point, without extra charge for switching; also each road absorbed the switching charge of a competitor on freight to be hauled by it to industries on the competitors' tracks at Richmond. Other railroads, the Chesapeake & Ohio and the Richmond, Fredericksburg & Potomac, not competitors for the southern business, entered Richmond and had switching facilities connecting with those of the competing roads. Such roads, however, did not absorb the switching charges on freight to be delivered to industries on the lines of the roads with which they were not in competition. Under a complaint of the Richmond Chamber of Commerce the Interstate Commerce Commission decided, three of the commissioners dissenting, that this method of business was an unlawful discrimination against the industries on the non-competing railroad lines under section 2 of the Interstate Commerce Act; and the federal district court for the Eastern District of Virginia refuses to enjoin the commission's order.—*Seaboard Air Line v. United States*, 249 Fed., 368. Decided January 19, 1918.

Supply Trade News

Ephron Catlin, Jr., secretary of the Southern Railway Supply & Equipment Company, of St. Louis, has enlisted in the Naval Reserve Flying Corps.

P. H. Hamilton, roadmaster on the St. Louis-San Francisco, at Sapulpa, Okla., has resigned to become southern representative of the P. & M. Company, with headquarters at Chicago.

H. E. Chilcoat, representative of the Westinghouse Air Brake Company at its Pittsburgh office, has severed his connection with that company to accept the position of manager of



H. E. Chilcoat

the Clark Car Company, manufacturers of the Clark extension side dump car. Mr. Chilcoat was born in Orbisonia, Pa., and received his early education in the public schools at that place. In 1900 he went to the Pittsburgh district, entering the employ of the Pennsylvania Railroad as machinist's helper and served successively as work inspector, gang foreman and foreman of the air brake department until 1906, when he left the railroad company to enter the service of the Westinghouse Air Brake Company as

traveling inspector. Shortly after joining the Westinghouse organization he was assigned to the southeastern district with headquarters at Richmond, Va. In 1910, he was transferred to the Pittsburgh district office as representative, looking after the commercial interests of the company in the district served by that office until August, when he resigned to take up the duties of his present position, with headquarters at Pittsburgh, Pa.

E. R. Wood, formerly eastern representative of the High Speed Hammer Company, Rochester, N. Y., has associated himself with the sales department of Sherritt & Stoer Company, Inc., Philadelphia, Pa.

F. J. O'Brien, formerly sales manager of the Globe Seamless Tube Company, of Chicago, and for the last year and a half mill manager at Milwaukee, has been promoted to general manager, with headquarters at Milwaukee, effective September 1.

J. G. Sullivan, who resigned recently as chief engineer of the Canadian Pacific, Western Lines, with headquarters at Winnipeg, Man., has opened a consulting engineer's office in that city, making a specialty of railway work, mining, foundations, tunnelling, elevators, etc.

L. C. Sprague, special railroad sales representative of the Chicago Pneumatic Tool Company, with headquarters at Chicago, has been promoted to district manager of sales for that company, at New York, succeeding **Charles Booth**, resigned. **C. W. Cross** succeeds Mr. Sprague.

Harry L. Barnitz, announces that he has severed his connection with the International Oxygen Company as sales agent, and is now conducting business under his own name as consulting engineer on oxygen and hydrogen, plant installation and technical processes for their uses. His office is at 617 West 152nd street, New York.

Robert F. Carr, president of the Dearborn Chemical Company, of Chicago, has been commissioned major on the general staff in the department of purchases, storage and traffic of the army, with headquarters at Washington, D. C. Major

Carr will work in conjunction with **Lieut. Col. W. R. Roberts** in connection with the standardization of army equipment.

The **A. G. A. Railway Light & Signal Company**, Elizabeth, N. J., reports the sale of steady lights to the Boston & Maine; three equipments for cars to the Detroit & Mackinac, and one Unison flashlight to the Delaware, Lackawanna & Western. Lights for cars have been shipped to Rio Janeiro, Brazil.

John W. Foyle, vice-president of the Gustin-Bacon Manufacturing Company, Kansas City, Mo., has accepted a commission as major in the Quartermaster Corps, and reported to Washington September 1. Mr. Foyle has been with the Gustin-Bacon Manufacturing Company five years, prior to which he served 17 years with the Missouri, Kansas & Texas. He was at one time chairman of the executive committee of the Railway Storekeepers' Association.

W. J. Schlacks announces that he has purchased the McCord Locomotive Lubricator Company and has incorporated the Locomotive Lubricator Company for the manufacture and sale of the Schlacks system of locomotive force feed lubrication. **O. H. Neal** and **C. W. Rudolph**, who have been associated with Mr. Schlacks and McCord & Co., have joined the new company. The Locomotive Lubricator Company will have offices in the Tower building, Chicago.

J. H. Rodger has been elected acting vice-president of the Safety Car Heating & Lighting Company, with office at Chicago. Mr. Rodger has been sales representative with that company



J. H. Rodger

since April, 1911, prior to which he was with the Standard Coupler Company and the Monarch Machine Company. **A. Clark Moore**, vice-president of the Safety Car Heating & Lighting Company, whom he succeeds, has been given a leave of absence for the duration of the war to accept a commission as major, in charge of aircraft production in New York district. Major Moore was born January 18, 1880, and entered the railway supply business in the New York office of the Safety Car Heating & Lighting Company in July, 1899.

In 1906 he went with the Western Steel Car & Foundry Company and later with McCord & Co., returning to the Safety Car Heating & Lighting Company in August, 1907, remaining with that company with the positions of sales agent in New York, 1907, manager, northwestern district, 1908, general manager, New York, 1911, and vice-president with headquarters in Chicago since June, 1913. Major Moore is a past president of the Railway Electrical Supply Manufacturers' Association.

Guy E. Tripp Special Assistant, Ordnance Department

Announcement is made of the appointment by Major General C. C. Williams, Chief of Ordnance, of five special assistants who will act for him in the general supervision of the various activities of the Ordnance Department.

Col. Guy E. Tripp, Ord. Dept., U. S. A. (chairman of the board of the Westinghouse Electric & Manufacturing Co.), who has been serving as chief of the production division, has been named as one of these special assistants, and has been placed in complete charge of the administration and work of the eleven district officers having supervision over the production of ordnance material in their respective sections of the country. The ordnance district chief will report directly to him.

W. H. Marshall, formerly president of the American Locomotive Company, and later associated with J. P. Morgan & Co., is another of the special assistants. Mr. Marshall will have supervision over the artillery program, including engineering, manufacturing and inspection.

Financial and Construction

Railway Financial News

CHICAGO, MILWAUKEE & ST. PAUL.—See editorial comments elsewhere in this issue.

CHICAGO & WESTERN INDIANA.—The \$15,000,000 one-year 6 per cent notes which matured on September 1, 1918, are being presented at the office of J. P. Morgan & Co., but are not being paid, because no funds have been received for the purpose. The Chicago & Western Indiana is a terminal company owned jointly by the Chicago & Eastern Illinois, Chicago, Indianapolis & Louisville, Grand Trunk Western, Wabash, and Erie. The notes are secured by \$21,000,000 first and refunding bonds which enjoy a first lien upon extensive freight-terminal property in and around Chicago, used by the Pennsylvania, Atchison, Illinois Central, Burlington, Rock Island, Chesapeake & Ohio, Erie, Wabash and other roads. In 1917 the company earned its interest charges and 6 per cent dividends on its \$5,000,000 stock. It has been generally expected among holders of the notes that the Railroad Administration would advance funds to meet the debt in case enough of the bonds could not be sold to provide the funds; and it is still expected that the notes will be dealt with in some way within a few days.

DENVER & RIO GRANDE.—See editorial comments elsewhere in this issue.

INTERBOROUGH RAPID TRANSIT.—A syndicate composed of J. P. Morgan & Co. and other bankers has been formed to sell \$33,400,000 of Interborough Rapid Transit Company's 3-year 7 per cent notes at 98½. These notes are secured by deposit of \$52,187,000 first refunding 5s into which the notes are convertible at maturity at 87½ per cent and interest. The new notes mature July 1, 1921.

NORTHERN PACIFIC.—See editorial comments elsewhere in this issue.

Railway Construction

ILLINOIS CENTRAL.—A one-story freighthouse, 38 ft. by 200 ft., with concrete foundation, brick walls and tile roof, is being built at La Salle, Ill. A platform 16 ft. wide will extend 120 ft. beyond the building and will be constructed of concrete, floored with creosote blocks. In addition, 1,100 sq. yd. of driveway will be paved with brick. The old freighthouse is being remodeled into a two-stall enginehouse. T. S. Leake & Co., Chicago, have the contract for the work. The improvements, including a rearrangement of tracks which is being done by the railroad, will cost about \$75,000.

This road is preparing plans for the construction of a one-story brick freight and passenger station at Dawson Springs, Ky., which will be 34 ft. by 192 ft., with a concrete foundation and a slate roof.

U. S. ARMY.—Company A of the 106th United States Engineers is building a railway from Sunburst, N. C., into the heart of a forest in the mountains in the western portion of that state, to provide transportation for timber, from which aeroplane parts will be made.

PORT PROJECT FOR ROME.—A convention has been signed by representatives of the Italian Government and by credited delegates of the city and province of Rome for constructing a port at Ostia Nuova, which when completed and connected with the Tiber by means of a navigable canal will give harbor facilities to the city of Rome and thereby satisfy an old ambition of the capital. The first group of works to be constructed will cost about 47,000,000 lire (\$9,000,000), which is to be advanced by the Commune, the state reimbursing, according to the convention, 50 per cent, and the province 10 per cent of the expenses. The port will allow on completion an annual movement of 1,000,000 tons.—*Commerce Reports.*

Railway Officers

Railroad Administration

General and Regional

Edward A. Chenery, whose appointment as general superintendent of telegraph of the Southwestern region, with headquarters at St. Louis, Mo., was announced in the *Railway Age*



E. A. Chenery

of August 30, was born on the Atlantic ocean on October 17, 1859. He entered railway service on the Grand Rapids & Indiana, as a telegraph operator, in November, 1872. He continued to serve in that capacity until January, 1879, when he went with the Galveston, Harrisburg & San Antonio, with which company he served successively as telegraph operator, despatcher, car accountant and secretary to the general superintendent. In December, 1886, he resigned to become secretary to the general superintendent of the Union Pacific.

The following year he became superintendent of telegraph of the Terminal Railroad Association of St. Louis. Sixteen years later he resigned to become superintendent of telegraph of the Missouri Pacific. On August 27, Mr. Chenery was appointed general superintendent of telegraph of all lines under federal control in the Southwestern region, with headquarters at St. Louis, Mo.

Charles Adelbert Morse, chief engineer of the Rock Island Lines, at Chicago, has been appointed assistant director of operation of the Railroad Administration in charge of maintenance of way, with headquarters at Washington, D. C.



C. A. Morse

Mr. Morse was born at Bangor, Me., on January 1, 1859, and was educated at the University of Maine. He began railroad work in 1880 as a chairman on the Chicago, Burlington and Quincy, and was subsequently instrument man and office man on the same road. From November, 1881, to 1884, he was division engineer on the Mexican Central. He then returned to the Burlington for a year and a half and in January, 1886, went with the

Atchison, Topeka & Santa Fe, with which road he was consecutively transitman, division engineer, and resident engineer during the ensuing 15 years. From July, 1901, to February, 1902, he was assistant to the chief engineer at Topeka, Kan., following which he was principal assistant engineer at La Junta, Col., engineer of the eastern grand division at Topeka, Kan.; acting chief engineer, with the same headquarters, and assistant chief engineer. From

September 1, 1905, to September 1, 1906, he was acting chief engineer of the Coast lines of the same system, with headquarters at Los Angeles, Cal., and in the following three years was chief engineer of the lines east of Albuquerque, with headquarters at Topeka, Kan. From November, 1909, to March, 1913, he was chief engineer of the entire Santa Fe system following which he was appointed to the same position on the Chicago, Rock Island & Pacific. In April, 1914, he was appointed also chairman of the valuation committee of the Rock Island, and this year when the railroads were placed under federal operation, he was appointed chief engineer of all the Rock Island lines. Mr. Morse has long been active in the affairs of the American Railway Engineering Association and is now its president.

The following have been appointed staff officers in the organization of the Southern regional director, with office at Atlanta, Ga.: **J. W. Small**, formerly superintendent of motive power, Seaboard Air Line, and recently mechanical assistant to regional director, staff officer, mechanical; **J. T. King**, staff officer, transportation; **W. R. Rodenbaugh**, staff officer, engineering; **E. H. Dulaney**, member Southern Regional Freight Traffic Committee, staff officer, traffic; **G. W. Lamb**, assistant comptroller, Louisville & Nashville, staff officer, accounting; **W. L. Stanley**, assistant to federal manager, Seaboard Air Line, staff officer, claims and claim prevention, and **J. A. Jones**, superintendent of telegraph, Southern Railway, staff officer, telegraph and telephone.

Federal and General Managers

E. L. Brown, general manager of the Denver & Rio Grande, has had his jurisdiction extended to include the Salt Lake City Union Depot & Railroad Company.

W. G. Biedr, federal manager of the Chicago & Alton, has had his jurisdiction extended over the Peoria & Pekin Union and the Peoria Railway Terminal, effective August 27.

J. E. Taussig, general manager of the Wabash, with office at St. Louis, Mo., has been appointed federal manager of that road and also of the Toledo, St. Louis & Western, with office at St. Louis, Mo.

E. D. Bronner, federal manager of the Michigan Central and the Grand Rapids & Indiana, with office at Detroit, Mich., has had his authority extended over the Detroit Terminal Railroad.

W. F. Thiehoff, assistant to the general manager of the Chicago, Burlington & Quincy, has been assigned to temporary service as acting general manager of the Denver & Salt Lake, with headquarters at Denver, Colo., effective August 28.

E. E. Calvin, federal manager of the Union Pacific, the Oregon Short Line, the St. Joseph & Grand Island and the Los Angeles & Salt Lake, has had his jurisdiction extended over the Ogden Union Railway & Depot Company, effective August 28.

The authority of **E. M. Costin**, federal manager of the Cleveland, Cincinnati, Chicago & St. Louis, the Muncie Belt Railway and the Indianapolis Union, with office at Cincinnati, Ohio, has been extended over the Chicago, Indianapolis & Louisville, the Cincinnati, Indianapolis & Western, and the Detroit, Toledo & Ironton.

L. Kramer, federal manager of the Missouri, Kansas & Texas, the St. Louis-San Francisco, the Oklahoma Belt and the West Tulsa Belt, has had his jurisdiction extended over the Kansas City, Clinton & Springfield. This road will be added to the second district of the St. Louis-San Francisco and will be operated as the Osceola subdivision of the Ozark division.

C. G. Burnham, federal manager of the Chicago, Burlington & Quincy, the Quincy, Omaha & Kansas City, the Toledo, Peoria & Western, west of Peoria, including the Peoria Terminal, the Rockport, Langdon & Northern and the Rapid City, Black Hills & Western, has had his jurisdiction extended to include the Illinois Terminal and the Missouri & Illinois Bridge and Belt, effective August 27.

The jurisdiction of **A. W. Thompson**, federal manager of the Baltimore & Ohio (East of Parkersburg and Pittsburgh);

the Cumberland Valley; the Western Maryland; the Coal & Coke; the Cumberland & Pennsylvania, and the Wheeling Terminal Railroad, with office at Philadelphia, Pa., has been extended over the Gettysburg & Harrisburg and over that portion of the Philadelphia & Reading from Shippensburg, Pa., to Harrisburg, Pa., which lines are released from the jurisdiction of **C. H. Ewing**, federal manager.

Operating

George Linn has been appointed acting manager of the Marine Department of the New York Central, with office at New York.

W. M. Corbett, terminal manager at Kansas City, Mo., has had his jurisdiction extended over the Kansas City Connecting Railway.

John Duffy, assistant secretary of the Lehigh Valley, has been appointed assistant to general manager with headquarters at New York.

H. D. Page has been appointed terminal manager of the Peoria-Pekin switching district, with headquarters at Peoria, Ill., effective August 27.

J. R. Roycroft has been appointed general agent, with office at Charleston, West Virginia, of the Chesapeake & Ohio, vice **G. D. Moffet**, resigned.

W. D. Trump, general manager of the Detroit Terminal Railroad, with office at Detroit, Mich., has been appointed terminal manager in charge of all terminal operations at Detroit.

F. A. Lehman and **John Purcell**, assistants to the vice-president on the Atchison, Topeka & Santa Fe, with headquarters at Chicago, have been appointed assistants to the federal manager.

Frank P. Little, assistant superintendent of the Chicago-Petoskey division of the Pere Marquette, has been appointed superintendent of the Detroit-Canadian division, with office at Detroit, Mich., vice **J. J. Corcoran**, promoted.

W. M. Edgar, superintendent transportation of the Weatherford, Mineral Wells & Northwestern, with office at Weatherford, Tex., has been appointed general superintendent and treasurer, with headquarters at Weatherford, vice **B. C. Crow**, second vice-president and general superintendent, resigned to accept other services.

H. V. Platt, president of the Ogden Union Railway & Depot Company and first vice-president of the Los Angeles & Salt Lake, with headquarters at Salt Lake City, Utah, has been appointed terminal manager with jurisdiction over the Salt Lake switching district, including Midvale, Utah, Murray and Garfield, and the Ogden (Utah) switching district.

J. Lowell White, superintendent of transportation of the Atlantic Coast Line, with authority over the First Division, also over the line between Winston-Salem and Wadesboro and the Winston-Salem Southbound, with headquarters at Rocky Mount, N. C., has had his authority extended over the system of the Atlantic Coast Line, with office at Wilmington, N. C., and **W. B. Darrow**, superintendent of transportation, with office at Wilmington, N. C., has been appointed superintendent of transportation of the First division, with office at Rocky Mount, N. C.

Augustus E. Ruffer, general superintendent of transportation on the Erie, with office at New York, has been appointed general superintendent of the lines east, vice **John J. Mantell**, furloughed to fill position of terminal manager; **Charles P. Eckels**, superintendent of the New York division and branches, with office at Jersey City, N. J., has been appointed general superintendent of transportation, vice Mr. Ruffer; **George H. Derby**, chief clerk to the general superintendent of transportation, has been appointed assistant to general superintendent of transportation; **William J. English**, superintendent of the Kent division, at Marion, Ohio, has been appointed superintendent of the New York division and branches, vice Mr. Eckels; **Harry R. Adams**, assistant superintendent of the Kent division, at Kent, Ohio, has been appointed superintendent of the Kent division, vice Mr. English.

George S. Stewart, having returned from the Russian Railway Service Corps, has been reappointed general superintendent of the lake district of the Great Northern, with headquarters at Superior, Wis. **P. F. Keating**, who has been general superintendent at Superior, has been appointed assistant general superintendent of the eastern district, with headquarters at St. Paul; **C. E. MacLaughlin**, assistant general superintendent at St. Paul, becomes superintendent of the Willmar division, with headquarters at Willmar, Minn.; **E. C. Huffman**, division superintendent at Willmar, has been transferred to the Breckenridge division, at Breckenridge, Minn.; **L. M. Davis**, division superintendent at Breckenridge, has been transferred to the northern division, with headquarters at Crookston, Minn., and **J. R. Miller**, who was division superintendent at Crookston, has been appointed trainmaster of the Fergus Falls division, with headquarters at Melrose, Minn., effective August 28.

M. W. Clement, division superintendent of the Pennsylvania Railroad, eastern lines, and the New York, Philadelphia & Norfolk, with office at Cape Charles City, Va., has been appointed superintendent of freight transportation. **R. H. Pinkham**, assistant division superintendent of the Pennsylvania, with office at Cresson, Pa., has been appointed superintendent of the New York, Philadelphia & Norfolk; **H. P. Lincoln**, division superintendent of the Pennsylvania, with office at Williamsport, Pa., has been appointed special agent, in the office of the general superintendent, central division; **H. H. Russell**, assistant division superintendent at Pittsburgh, Pa., has been appointed superintendent of the Williamsport division; **T. A. Roberts**, assistant division superintendent at Frazer, has been appointed assistant superintendent of the Pittsburgh division with headquarters at Youngwood; **W. M. Post**, assistant division superintendent at Mifflin, has been appointed assistant superintendent of the Pittsburgh division, with office at Cresson; **G. C. Koons**, assistant division superintendent at Trenton, N. J., has been appointed assistant superintendent of the Middle division, with office at Mifflin, and **C. E. Brinser**, terminal division engineer at Philadelphia, has been appointed assistant superintendent of the New York division with office at Trenton, N. J.

Financial, Legal and Accounting

W. H. Ross has been appointed acting federal treasurer of the Kansas City, Mexico & Orient lines, with headquarters at Wichita, Kan., succeeding **E. H. Rowley**, resigned, effective August 24.

H. Johnson, secretary, auditor and general freight and passenger agent of the Duluth & Iron Range, with office at Duluth, Minn., has been appointed general freight and passenger agent and federal auditor.

E. M. Smith, secretary, treasurer and auditor of the Kansas City, Clinton & Springfield, with headquarters at Springfield, Mo., will continue to act as auditor. **R. F. McGlothlan** has been appointed acting federal treasurer.

W. L. Holder has been appointed land and tax commissioner, and **F. J. Burke**, assistant general freight agent of the Texas & Pacific at New Orleans, La., has been appointed assistant land and tax commissioner of all of the lines under the jurisdiction of **J. L. Lancaster**, federal manager. Mr. Holder will have his headquarters at Houston, Texas, and Mr. Burke at Dallas, effective September 1.

O. H. Bower, auditor of the Missouri, Kansas & Texas, of Texas, with headquarters at Dallas, Texas, has been appointed also auditor of the Union Terminal of Dallas, with the same headquarters, succeeding **A. S. Steirer**, resigned. **R. P. Roach**, local treasurer of the Missouri, Kansas & Texas of Texas, with headquarters at Dallas, has been appointed also acting federal treasurer of the Union Terminal of Dallas, with headquarters at Dallas, succeeding **J. W. Everman**, resigned.

James Maffitt Danner, whose appointment as auditor and local treasurer of the Abilene & Southern, with headquarters at Abilene, Tex., was announced in the *Railway Age* of August 16, was born at Ft. Worth, Tex., on July 30, 1887. Mr. Danner entered the service of the Ft. Worth & Denver City on July

11, 1903, as an office boy in the accounting department and subsequently became interline clerk in the joint account department. On July 1, 1907 he went with the Trinity & Brazos Valley as chief clerk of interline accounts at Ft. Worth, Tex. In the fall of that year he entered the service of the St. Louis-San Francisco in the interline freight accounting department of which he had charge. On March 1, 1908, he became a special clerk in the accounting department of the Atchison, Topeka & Santa Fe at Amarillo, Tex. The following year he left railway service to engage in business. Six months later, however, he returned to railroad work as cashier of the Wichita Valley, at Abilene. On August 15, 1910, he became assistant auditor of the Abilene & Southern, which position he held until his appointment as mentioned above.

Harry D. Heuer, whose appointment as general auditor of the Terminal Railroad Association of St. Louis, the St. Louis Merchants Bridge Terminal, the Wiggins Ferry, the



Harry D. Heuer.

St. Louis Transfer, the St. Louis Connecting Railway and the Interstate Car Transfer, was announced in the *Railway Age* of August 23, has had his jurisdiction extended to include the Alton & Southern, the St. Louis & O'Fallon, the St. Louis National Stock Yards, the East St. Louis National Stock Yards, the St. Louis & Belleville Electric and the St. Louis, Troy & Eastern. Mr. Heuer was born at St. Louis, Mo., on September 8, 1873, and began railway work in the auditor's office of the St. Louis & San

Francisco in June, 1890. The following year he became general accountant of the St. Louis Merchants Bridge Terminal. In August, 1894, he was appointed assistant to the auditor of the Terminal Railroad Association of St. Louis and the St. Louis Merchants Bridge Terminal and on April 1, 1903, he became assistant auditor of the Terminal Railroad Association of St. Louis and its affiliated companies, which position he held until his appointment as general auditor as mentioned above.

Traffic

Girvan N. Snider has resumed the duties of coal traffic manager of the New York Central (Line Buffalo, N. Y., Clearfield, Pa., and East) and the West Shore Railroad, with office at New York, **J. Noble Snider**, acting coal traffic manager having entered the United States military service.

Robert L. Russell, assistant freight traffic manager of the Philadelphia & Reading, with office at Philadelphia, Pa., has been appointed chairman of the freight traffic committee of the North Atlantic Ports, with office at New York, succeeding **George D. Ogden**, who is now chairman of the Exports Control Committee.

R. W. Hockaday, industrial commissioner of the Missouri, Kansas & Texas, with headquarters at St. Louis, Mo., has been appointed industrial commissioner of that road and the St. Louis-San Francisco, with the same headquarters. **E. C. Hoag** has been appointed assistant industrial commissioner, with headquarters at St. Louis, Mo., effective September 1.

W. F. Sterley, general freight and passenger agent of the Ft. Worth & Denver City, has been appointed assistant general freight agent of that road the Wichita Valley the Houston & Texas Central, the St. Louis-San Francisco and Texas, the Ft. Worth & Rio Grande, the Brownwood North & South, the International & Great Northern (Ft. Worth to Spring-Madisonville branch), the Abilene & Southern and the Ft. Worth Belt, with headquarters at Ft. Worth, Tex., effective September 1.

Engineering and Rolling Stock

William A. Cotton, chief clerk to the general mechanical superintendent of the Erie, has been appointed assistant to the general mechanical superintendent, with office at Meadville, Pa.

W. G. Massenburg, division engineer on the Gulf, Colorado & Santa Fe, at Beaumont, Texas, has been appointed district engineer of that road and the Ft. Worth & Rio Grande, the St. Louis-San Francisco & Texas, the Brownwood North & South, the Texas Midland, the International & Great Northern from Spring to Ft. Worth and Madisonville branch, the Ft. Worth Belt and the Ft. Worth Passenger Station, with headquarters at Galveston, Tex.

Walter R. Roof, whose promotion to bridge engineer of the Chicago Great Western, with headquarters at Chicago, was announced in the *Railway Age* of August 23, was born



W. R. Roof

at Newcastle, Ind., on April 15, 1881. Mr. Roof was educated at Purdue University, graduating in 1906. In June of that year he entered railway service with the Chicago & North Western, at Chicago, as a rodman. The following year he went with the Pullman Company, serving in an engineering capacity. Later in the same year he became draftsman in the bridge and building department of the Illinois Central, where he remained until 1910, when he went with the Chicago Great Western in the same capacity.

In 1913 he was promoted to assistant bridge engineer, which position he held until his appointment as noted above.

T. T. Irving, whose promotion to chief engineer of the Grand Trunk, Western Lines, with headquarters at Detroit, Mich., was announced in the *Railway Age* of August 30, was



T. T. Irving

educated at the Prince of Wales College and McGill University, graduating from the latter institution in 1898. He entered the service of the Grand Trunk in May of that year as assistant engineer on the eastern division at Montreal. In 1904, Mr. Irving was promoted to resident engineer on the western division and was engaged in that capacity until 1912, at which time he was appointed trainmaster. The following year he became division engineer on the western lines, with headquarters at Chicago, which position

he held until his promotion to chief engineer of the Western Lines, at Detroit, Mich., as mentioned above. Mr. Irving has been in the service of the Grand Trunk continuously for a period of 20 years.

D. W. Thrower, assistant valuation engineer of the Illinois Central, has been appointed valuation engineer, with office at Chicago, succeeding **D. J. Brumley**, resigned to go with the corporation.

Maurice Coburn, principal assistant engineer of the Pennsylvania Lines West, St. Louis system, has been appointed

supervising engineer of those lines, with headquarters at Indianapolis, Ind.

The following appointments have been made in the engineering organization for all of the lines under the jurisdiction of **J. S. Payett**, federal manager, and **F. Merritt**, chief engineer; **K. B. Duncan**, engineer on the Gulf Lines of the Gulf, Colorado & Santa Fe, with headquarters at Galveston, Texas, has been appointed bridge engineer, with headquarters at Dallas, Texas. **J. L. Starkie**, office engineer on the Gulf, Colorado & Santa Fe, with headquarters at Galveston, Texas, has been appointed assistant engineer; **J. H. Davidson** has been appointed water engineer, with headquarters at Dallas; **W. A. Hudson** has been appointed right of way agent, with headquarters at Dallas.

Corporate

Executive, Financial, Legal and Accounting

John W. Platten, whose election to the presidency of the Gulf, Mobile & Northern was announced in the *Railway Age* of June 28, entered the railway service in 1888 as a clerk in the



J. W. Platten

office of the assistant general passenger agent of the New York, Pennsylvania & Ohio, at Cleveland. He remained with the Erie system for about 14 years, and in 1901 was appointed treasurer of the company. In 1903 he resigned and went to the Lehigh Valley, of which road he became second vice-president in 1904. Since 1905 he has held no official position in the railroad world, although he has been prominent in financial matters and has been chairman of a number of reorganization committees, including the first extension

mortgage bond holders' committee of the Missouri, Kansas & Texas. He is a director of the Atlanta & Charlotte Air Line and of the Meridian & Memphis.

Charles Kephart Dunlap, whose election as president of the Southern Pacific Lines in Texas and Louisiana was announced in the *Railway Age* on July 26, was born at Green-



C. K. Dunlap

field, Ohio, on April 8, 1863. Mr. Dunlap entered railway service on July 5, 1887, on the Mexican International, now a part of the National Railways of Mexico, then owned by the Southern Pacific Company. He was first employed in the material department and subsequently was cashier at Torreon, Mex., agent at Sabinas, rate clerk, chief clerk and commercial agent at Monterey and Mexico City. In July, 1893, he was promoted to general freight and passenger agent, and in August, 1901, was ap-

pointed general freight agent of the lines composing the Southern Pacific System in Texas. Five years later he was promoted to traffic manager, which position he held at the time of his election as mentioned above.

G. B. Herbert, auditor of the Southern Pacific Lines in Louisiana and secretary and auditor of the Lake Charles & Northern at New Orleans, La., has been appointed secretary and auditor of the Southern Pacific Lines in Texas and Louisiana. **O. M. Longnecker** has been appointed treasurer. Mr. Herbert and Mr. Longnecker succeed **D. J. DeBlanc**, whose appointment as local treasurer under the Railroad Administration was announced in the *Railway Age* of July 12. **S. G. Reed**, assistant general freight and passenger agent of the Southern Pacific Texas Lines at Dallas, Texas, has been appointed land and tax agent, effective September 1.

Operating

W. E. Brown has been appointed general manager of the Dayton, Toledo & Chicago, with headquarters at Covington, Ohio, vice **W. J. Bohon**, resigned.

Lawrence V. Guild, assistant to the receiver of the Kansas City, Mexico & Orient and assistant to the president of the Kansas City, Mexico & Orient of Texas, has resigned to become secretary to the federal manager of the Union Pacific System, with headquarters at Omaha, Neb.

Arthur B. Starr, special assistant to the fourth vice-president of the Pennsylvania Lines West and previous to May 1, 1916, general superintendent of freight transportation of the same lines, was retired on July 16, through the operation of the pension regulations, after 48 years and 4 months continuous service with the Pennsylvania System.

Traffic

William R. MacInnes, whose appointment as vice-president of the Canadian Pacific, in charge of traffic, was announced in our last issue, has been freight traffic manager of that road for the last fifteen years. He was born at Hamilton, Ont., on June 7, 1867, and was educated at private schools in Canada and in England and at Marlborough College, England. He is the son of the late Donald MacInnes, who was a senator in the Canadian Parliament, and a member of the board of directors of the Canadian Pacific Railway. **W. R. MacInnes**, has been in the service of the Canadian Pacific since June, 1885, having begun that year as a clerk in the purchasing department at Montreal. He was soon promoted to a position in the solicitor's office and then was transferred to the traffic department, in which he was rapidly promoted. In 1896 he was made Chicago representative of the freight department, and three years later became general freight agent of the company's lines west of Lake Superior. Here he remained three years, 1899-1901, and in the latter year was promoted to the position of assistant freight traffic manager of the western lines. This he held until his promotion to freight traffic manager in 1903.

Daniel T. McCabe, vice-president in charge of traffic of the Pennsylvania Railroad, Western Lines, was retired from active service on July 1, under the operation of the company's pension regulations and placed on the Roll of Honor after a continuous service of 48 years. While withdrawing as an executive officer Mr. McCabe will continue to serve the corporate interests of the Pennsylvania System by remaining a member of the board of directors of the Pittsburgh, Cincinnati, Chicago and St. Louis, the Pennsylvania Company and other corporations. **Samuel Moody**, passenger traffic manager of the Pennsylvania Lines West of Pittsburgh also retired from active service under the pension regulations on July 1. He had been in the service of the company for 32 years and 6 months.



W. R. MacInnes

Engineering and Rolling Stock

J. J. Ginty, signal inspector on the Grand Trunk, has been appointed supervisor of signals at Montreal, Que., succeeding **Charles H. Tillett**, promoted.

J. A. Burnett, electrical engineer in the signal department of the Grand Trunk at Montreal, Que., has resigned to become technical assistant on the British government war purchasing board, at Washington, D. C.

F. T. Hatch, chief engineer maintenance of way of the Pennsylvania Lines West, St. Louis system, with headquarters at St. Louis, Mo., remains with the corporation as consulting engineer and will have charge of valuation matters, with headquarters at St. Louis.

George H. Davis, resident engineer of the Toronto Terminals of the Canadian Pacific, has been appointed assistant engineer maintenance of way, with office at Montreal, Que., and **U. A. G. Dey**, assistant engineer of construction at Montreal, has been made assistant engineer of the Toronto Terminals, succeeding Mr. Davis.

R. C. Watkins, division superintendent on the Southern Pacific Lines in Texas, has been appointed maintenance of way engineer of the Southern Pacific Lines in Texas and Louisiana. **E. B. Dailey**, assistant director of purchases of the Southern Pacific System at New York, has been appointed mechanical engineer of the Southern Pacific Lines in Texas and Louisiana, effective September 1.

Obituary

G. A. Bruce, general master mechanic of the Great Northern, eastern district, with headquarters at St. Paul, died on August 26, at Minot, N. D.

C. W. Van Buren, general master car builder of the Canadian Pacific, was killed in an automobile accident near Albany, N. Y., on August 25.

Robert E. Smith, general superintendent of motive power of the Atlantic Coast Line, with office at Wilmington, N. C., was found dead in bed on August 27. Mr. Smith's rifle was found in his room and it is the opinion of a coroner's jury that he had accidentally shot himself while cleaning the gun.

Thomas R. Taltavall, editor of *Telegraph and Telephone Age*, died at his home in Mahwah, N. J., on September 2 at the age of 63. Mr. Taltavall was for many years a prominent figure in the conventions of the Railway Telegraph Superintendents' Association, and had a wide acquaintance among railroad men in that department. He was an expert telegrapher, and was for many years superintendent of the leased wire system of the Associated Press. He had worked in the technical press editorial field for the past 28 years, and had been editor of *Telegraph and Telephone Age* since 1911.

Charles W. W. Field, formerly city passenger agent of the Central Vermont and the Grand Trunk, at Boston, and second lieutenant in the 103rd Machine Gun Battalion, 52nd Brigade, 26th Division, of the American Expeditionary Forces, was killed in action in France on July 19. Lieutenant Field was born in Windham, Me., on June 25, 1892, the son of a veteran of the Civil War. He was educated at Windham High School and Bowdoin College, and entered the railroad service at Portland, Me., as a ticket seller of the Boston & Maine. Later he went to Boston in the service of that company, and entered the employ of the Central Vermont in January, 1917. He resigned a few months later to attend the officers' training camp at Plattsburg, N. Y.

RECEIPTS FROM THE NATIONAL FORESTS in the fiscal year 1918, ending June 30, exceeded those for 1917 by almost \$120,000, and totaled over \$3,574,000.

CHAMBER OF COMMERCE FOR BUENOS AYRES.—An Allied chamber of commerce has been organized in Buenos Ayres to unify and promote commercial and trade interests of the nations at war with Germany. The chamber will be governed by three delegates from each of the British, French, Italian and Belgian chambers of commerce and three delegates from the American Commercial Club. A paid secretary will be in charge and will answer inquiries.